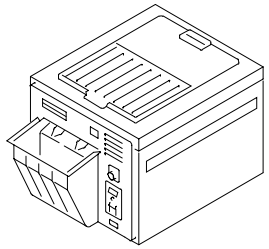
Publication No. 981900
September 1996
Supersedes September 1992

INSTALLATION INSTRUCTIONS

for the
Kodak M35-M and M35A-M *X-Omat* PROCESSORS



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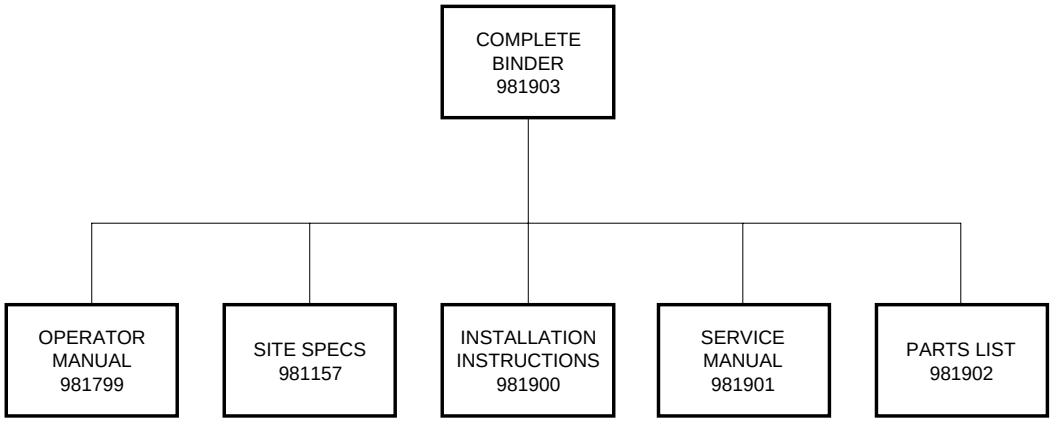
This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

Warning

To avoid hazardous conditions, keep floors and floor coverings around your *Kodak X-Omat* PROCESSOR and associated drains clean and dry at all times. Any accumulation of fluids from mixing tanks, drain lines, etc, should be cleaned up immediately. In the event of an accumulation of liquid due to backup, overflow, or other malfunctions of the drain associated with your *Kodak X-Omat* PROCESSOR, call a plumber or other contractor to correct any problem with the drain. Kodak accepts no responsibility or liability whatsoever for the serviceability of any drain connected to or associated with a *Kodak X-Omat* PROCESSOR. Such drains are the sole responsibility of the customer.

Related Publications for the M35-M and M35A-M PROCESSORS

This publication is part of a series of instruction books that provides technical support information on the *Kodak* M35-M and M35A-M *X-Omat* PROCESSORS. If you need an adiitional or replacement publication, order it through your Eastman Kodak Representative using the Publication Part Numbers below.



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Special Tools Required

Only qualified personnel should install this PROCESSOR. The following tools are required:

Part No.	Description
TL-2431	Air Meter
TL-1434	Level - approximately 30 cm (12 in.)
TL-1481	Potentiometer Adjusting Tool
1C7639	For M35A-M Processors only, Turnaround Adjustment Tool

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Section 1: Electrostatic Discharge

Overview

ESD - electrostatic discharge - is a primary source of:

- product downtime
- lost productivity
- costly repairs

While one cannot feel a static charge of less than 3,500 volts, as few as 30 volts can damage or destroy essential components in electronic equipment.

Preventive Measures

- Always look for an ESD warning label before doing any procedure involving static-sensitive components such as CIRCUIT BOARDS. All static-sensitive components are marked with bright graphic labels, which frequently include instructions. Follow all label instructions.
- Wear a grounding strap when handling static-sensitive components. Always make certain that the clip remains attached to a properly grounded, unpainted, clean surface.
- Repair static-sensitive components at an ESD-protected work station or use a portable grounding mat. For help in setting up an ESD-protected work station, contact your Kodak representative.
- When moving static-sensitive components from one area to another, insert and transport the components in ESD-protective packaging. Transparent antistatic bags are available from a variety of manufacturers and will help shield components from ESD damage.

Section 2: Unpacking the PROCESSOR

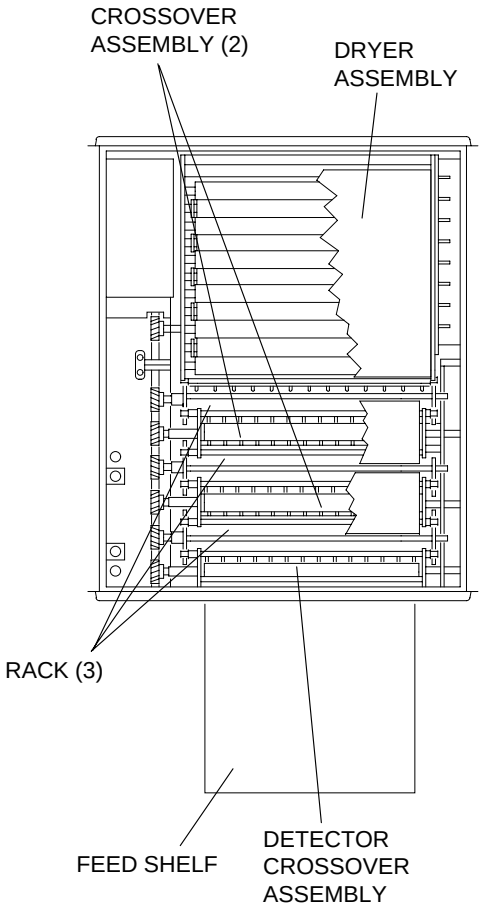
[1] Remove the PACKING CARTON.

[2] Remove and keep the bags of parts, loose parts, and wrapped parts.

[3] During the unpacking, check the parts with the Packing List.

[4] Remove:

- TOP COVER
- 2 SIDE PANELS
- PACKING MATERIAL
- DETECTOR CROSSOVER ASSEMBLY
- 2 CROSSOVER ASSEMBLIES
- DRYER ASSEMBLY
- 3 RACKS
- installation and operator publications



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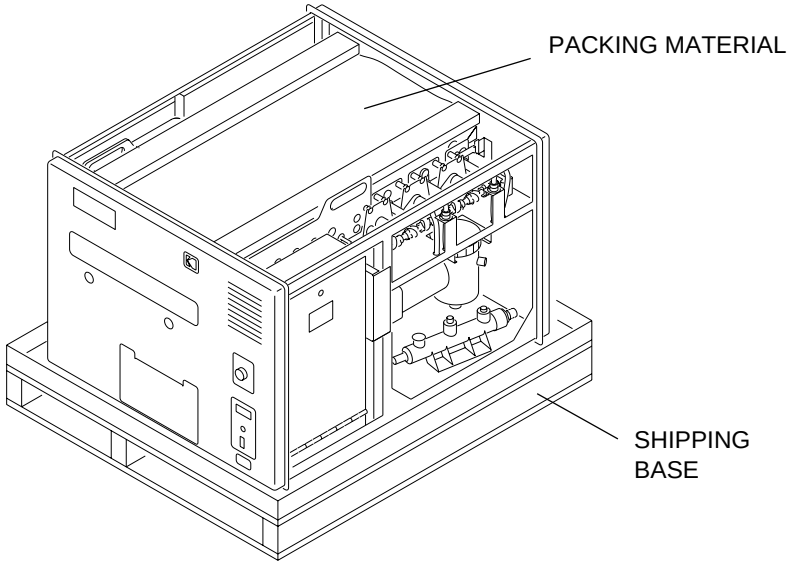

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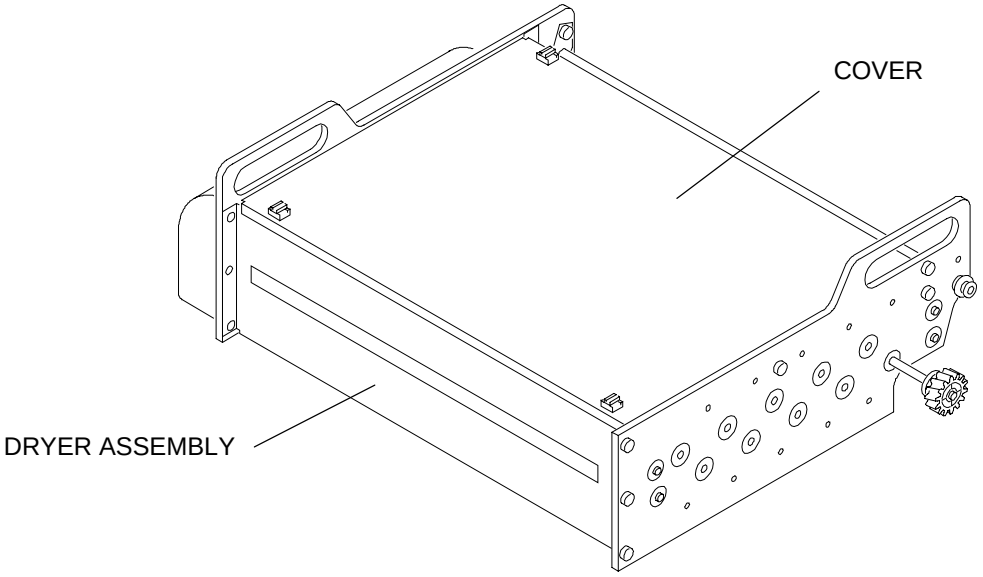

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[5] From the DRYER ASSEMBLY, remove the:

- top and bottom COVERS
- PACKING MATERIAL

[6] Install the top and bottom COVERS on the DRYER ASSEMBLY.

[7] Carefully remove the PACKING MATERIAL from the TANKS.

[8] Before you start the PROCESSOR installation, check that you have all the parts listed on Page 6.

[9] Remove dust from the TANKS, the RACKS, the CROSSOVER ASSEMBLIES, and the DRYER SECTION by rinsing with water. Wipe dry with a soft, clean cloth.

Packed In Top of Packing Carton	Quantity
Bin - Receiving	1
Deflector - Bin	1
Feed Shelf Assembly	1
Gasket - Light Lock	1
Weir - Developer, red	1
Weir - Fixer, blue	1
Weir - Wash, beige	1
Wrapped in Paper	**Quantity**
Cover - Evaporation	2
Guard - Splash	1
Tray - Drip	1

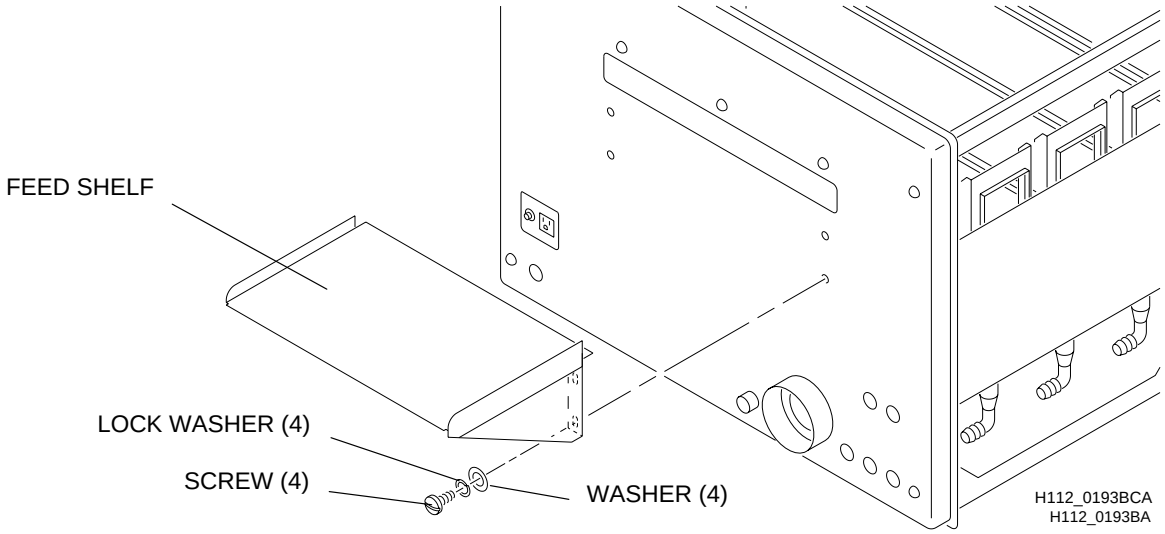
Packed In or Is Already On the Processor	Quantity
Cover Assembly	1
Side Panel Assembly	2
Detector Crossover Assembly	1
Fixer/Wash Crossover Assembly	1
Developer/Fixer Crossover Assembly	1
Developer Rack Assembly	1
Fixer Rack Assembly	1
Wash Rack Assembly	1
Dryer Rack Assembly	1
Installation and Operator Publications	2

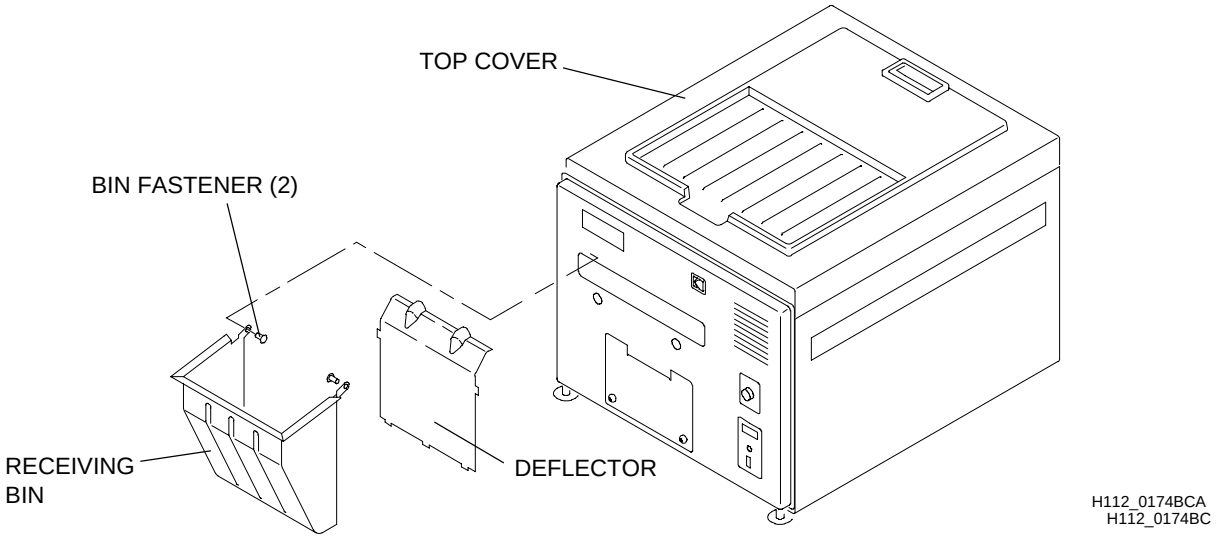
Prepack Plastic Bag for an M35A-M Processor	Quantity
Bolt - Hook	2
Cartridge - Filter	1
Clamp - Hose, large	2
Clamp - Hose, small	6
Elbow - Exhaust	1
Elbow - Hose	1
Fastener - Bin	2
Guide - Film, right	1
Nut - No. 8-32	3
Nut - No. ¼ -20	4
Plate - Floor	4
Receptacle - Polarized	1
Screw - No. 8-32 x 5⁄16	1
Screw - No. 8-32 x 3⁄8	3
Screw - No. 10-32 x 3⁄8	2
Screw - No. 10-32 x ½	4
Sprocket - 19-Tooth, 50 Hz	1
Strainer Assembly	2
Washer - Flat	4
Washer - Hook	2
Washer - Lock, No. 8	3
Washer - Lock, No. 10	6
Washer - No. 8	3
Washer - No. 10	6

Prepack Plastic Bag for an M35-M Processor	Quantity
Bolt - Hook	2
Bracket - Strain Relief, 220 volt only	1
Cartridge - Filter	1
Clamp - Hose, large	3
Clamp - Hose, small	6
Elbow - Hose	1
Fastener - Bin	2
Guide - Film, right	1
Nut - No. 8-32	3
Nut - No. ¼ -20	4
Plate - Floor	4
Relief - Strain, 220 volt only	1
Screw - No. 8-32 x 3⁄8	3
Screw - No. 10-32 x 3⁄8	3
Screw - No. 10-32 x ½	4
Sprocket - 19-Tooth, 50 Hz	1
Strainer Assembly	2
Strip - Data	1
Tie - Wire	2
Washer - Flat	4
Washer - Hook	2
Washer - Lock, No. 8	3
Washer - Lock, No. 10	7
Washer - No. 8	3
Washer - No. 10	7

Section 3: Preparing the PROCESSOR for Installation

Installing the FEED SHELF





Caution

Do not overtighten the SCREWS.

[1] Install the:

- FEED SHELF
- 4 WASHERS - No. 10
- 4 LOCK WASHERS - No. 10
- 4 SCREWS - No. 10-32 x ½

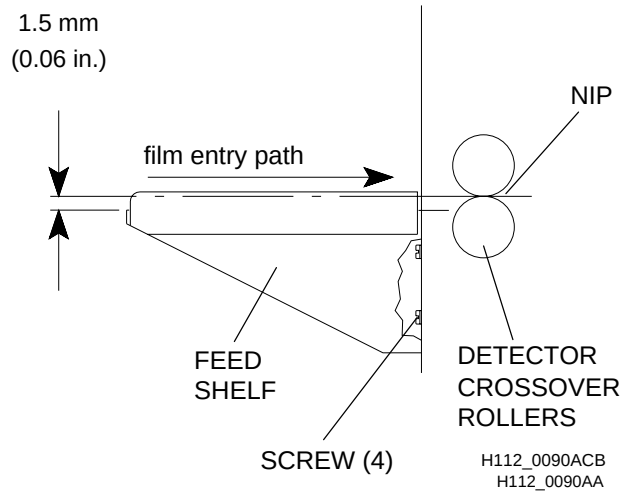
[2] Install the DEFLECTOR in the RECEIVING BIN.

[3] Install the RECEIVING BIN on the PROCESSOR using the 2 BIN FASTENERS.

Note

If you are using a LIGHTTIGHT FEED TRAY, you cannot feed 2 sheets of 18 x 24 cm film side-by-side.

Adjusting the FEED SHELF

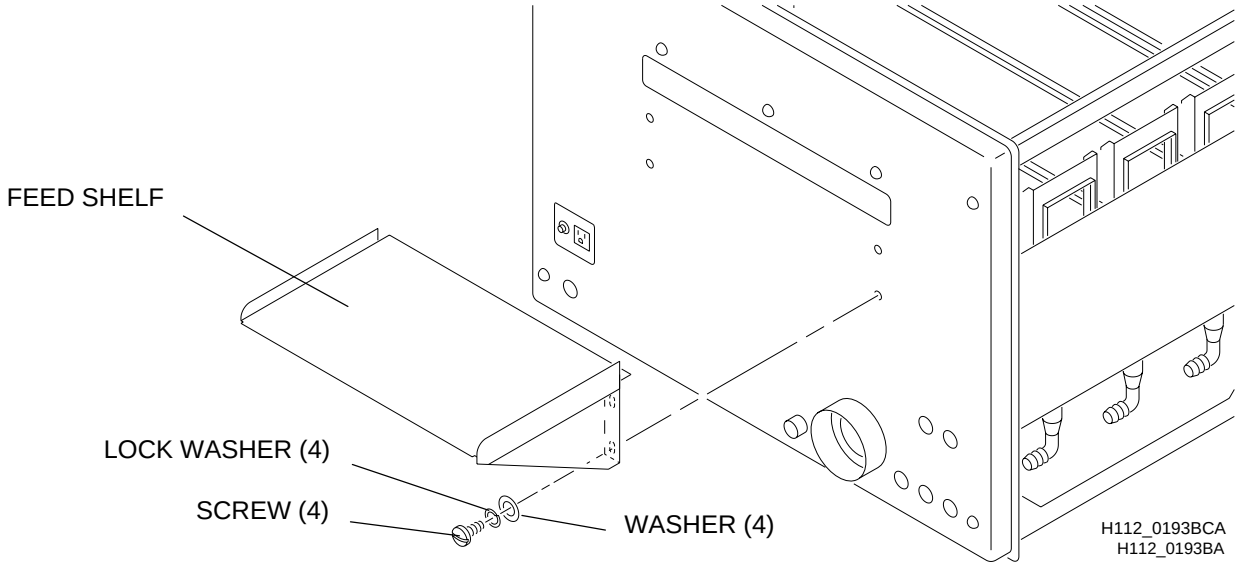


[1] Adjust the height of the FEED SHELF to approximately 1.5 mm (0.06 or 1/16 in.) below the NIP of the DETECTOR CROSSOVER ROLLERS.

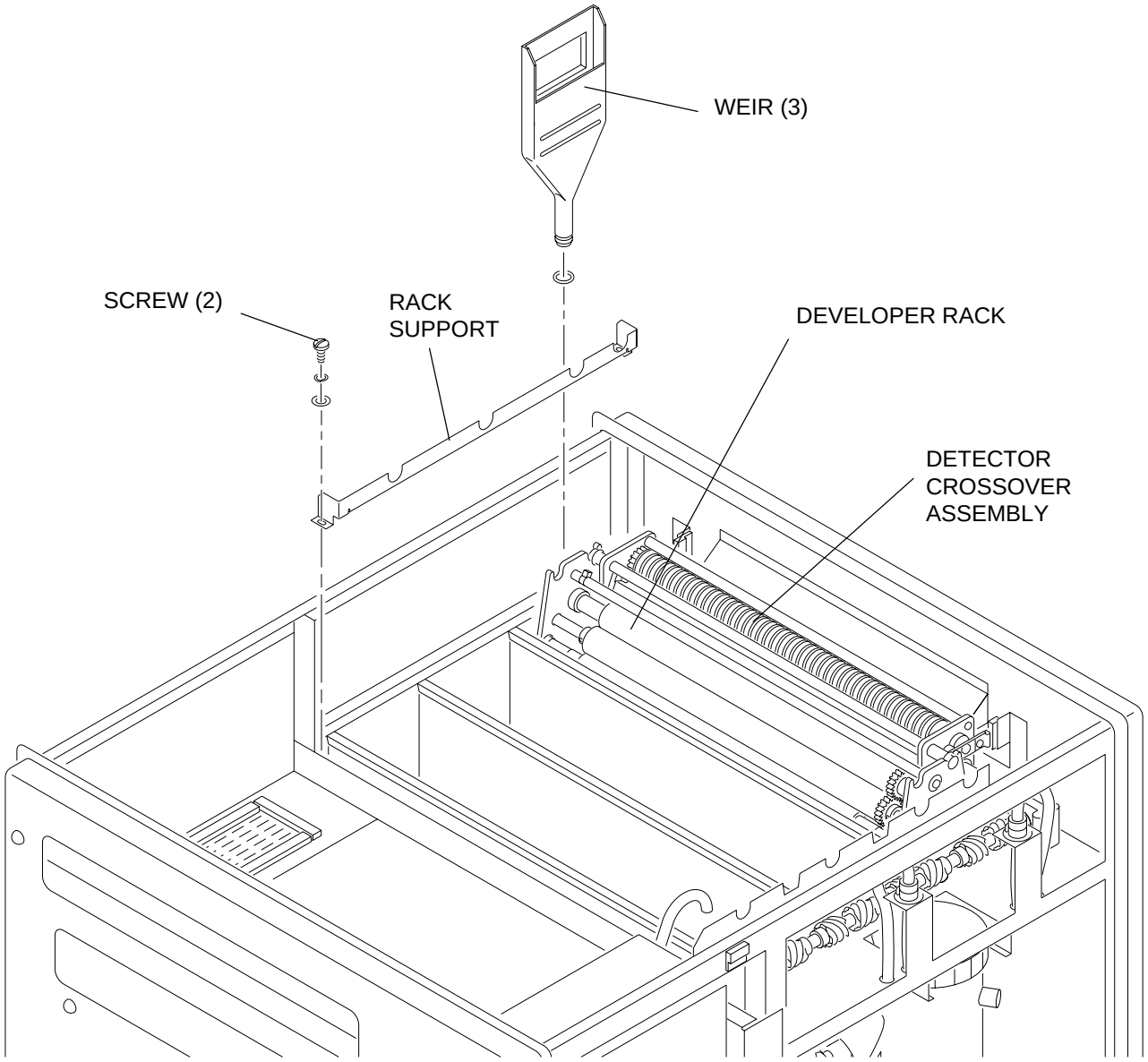
- **(a)** Loosen the 4 SCREWS.
- **(b)** Adjust the FEED SHELF for the correct height by moving the FEED SHELF up or down.
- **(c)** Insert a sheet of 35 x 43 cm film into the NIP of the DETECTOR CROSSOVER ROLLERS.

[2] Use the edges of the film to align the FEED SHELF with the DETECTOR CROSSOVER ROLLERS for squareness.

[3] Tighten the 4 SCREWS.



Installing the DEVELOPER RACK and the DETECTOR CROSSOVER AY



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[1] Install the 3 WEIRS.

[2] Install the DEVELOPER RACK.

[3] Loosen the 2 SCREWS and pull the RACK SUPPORT to the nondrive side of the PROCESSOR.

[4] Check the clearance by removing the WEIRS and the DEVELOPER RACK.

[5] If necessary, move the RACK SUPPORT.

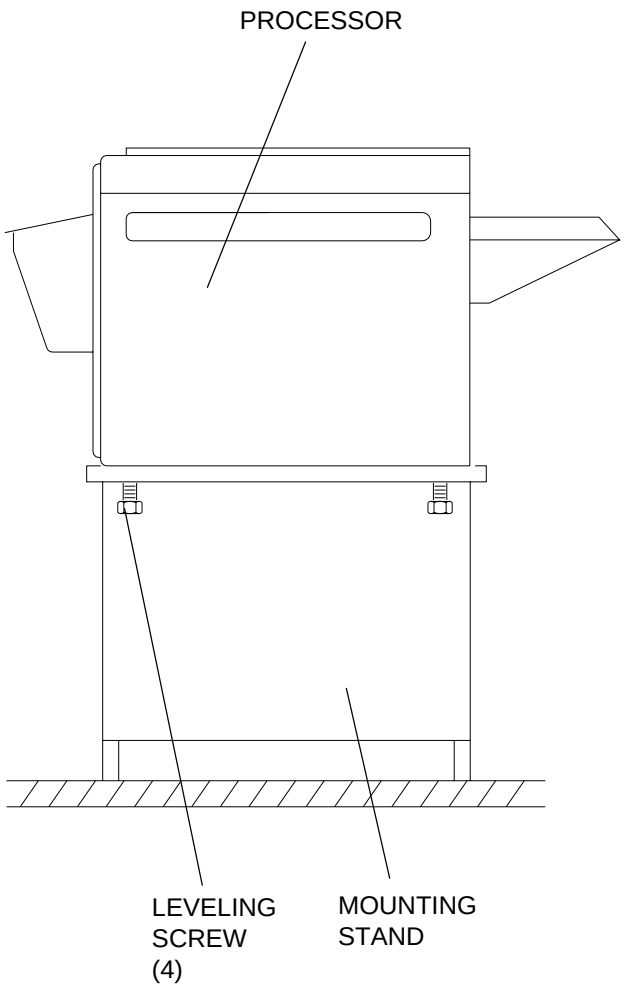
[6] Tighten the 2 SCREWS on the RACK SUPPORT.

[7] Install:

- DEVELOPER RACK
- WEIRS
- DETECTOR CROSSOVER ASSEMBLY

Section 4: Installing the PROCESSOR

Installing the PROCESSOR onto a Flat Surface



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Warning

The PROCESSOR weighs 90 kg (200 lb). Use qualified personnel to install this PROCESSOR.

[1] Remove the PROCESSOR from the SHIPPING BASE. See the figure at the bottom of Page 5.

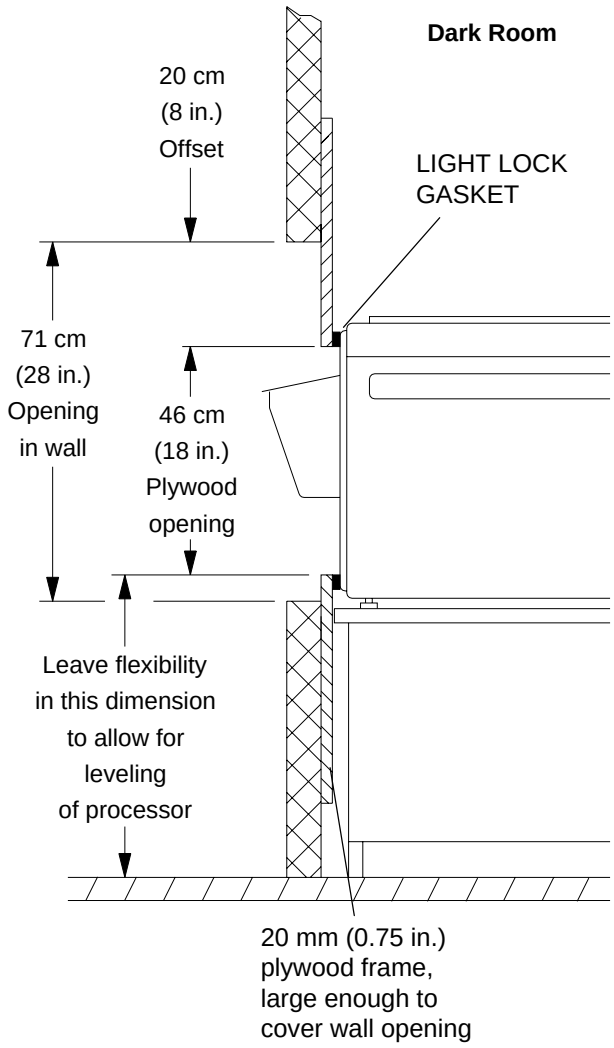
[2] Remove the 4 LEVELING SCREWS from the PROCESSOR.

[3] Install the PROCESSOR on a stable, flat surface or on a *Kodak* M35/M43 *X-Omat* MOUNTING STAND, CAT No. 808 1176.

[4] Install the LEVELING SCREWS through the MOUNTING STAND or the stable, flat surface.

Installing the PROCESSOR Through a Wall

Wall Installation with the RECEIVING BIN through the Wall



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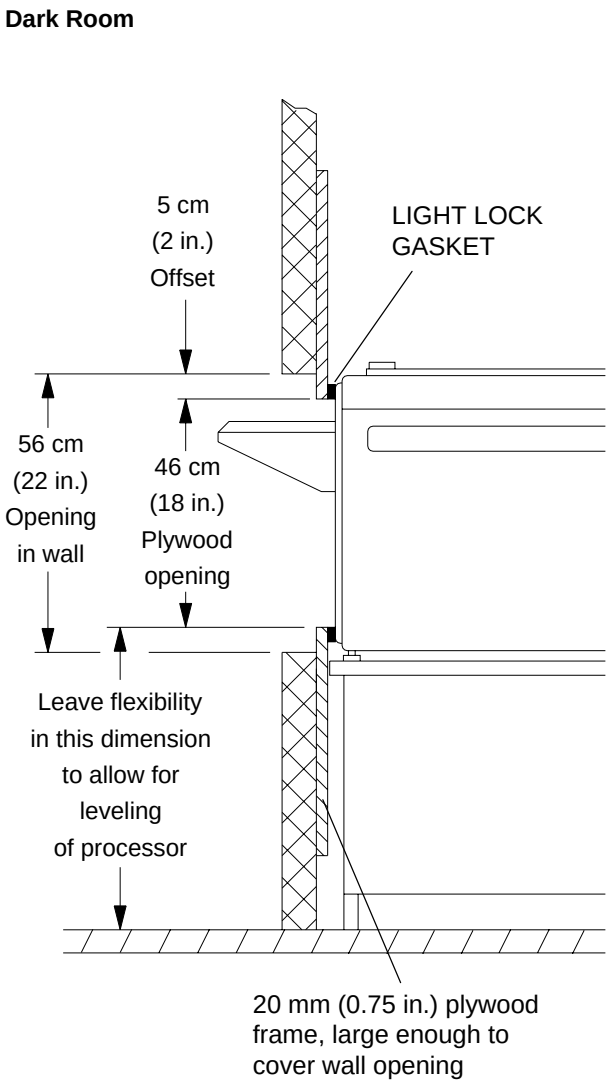
Wall Installation with the FEED SHELF through the Wall



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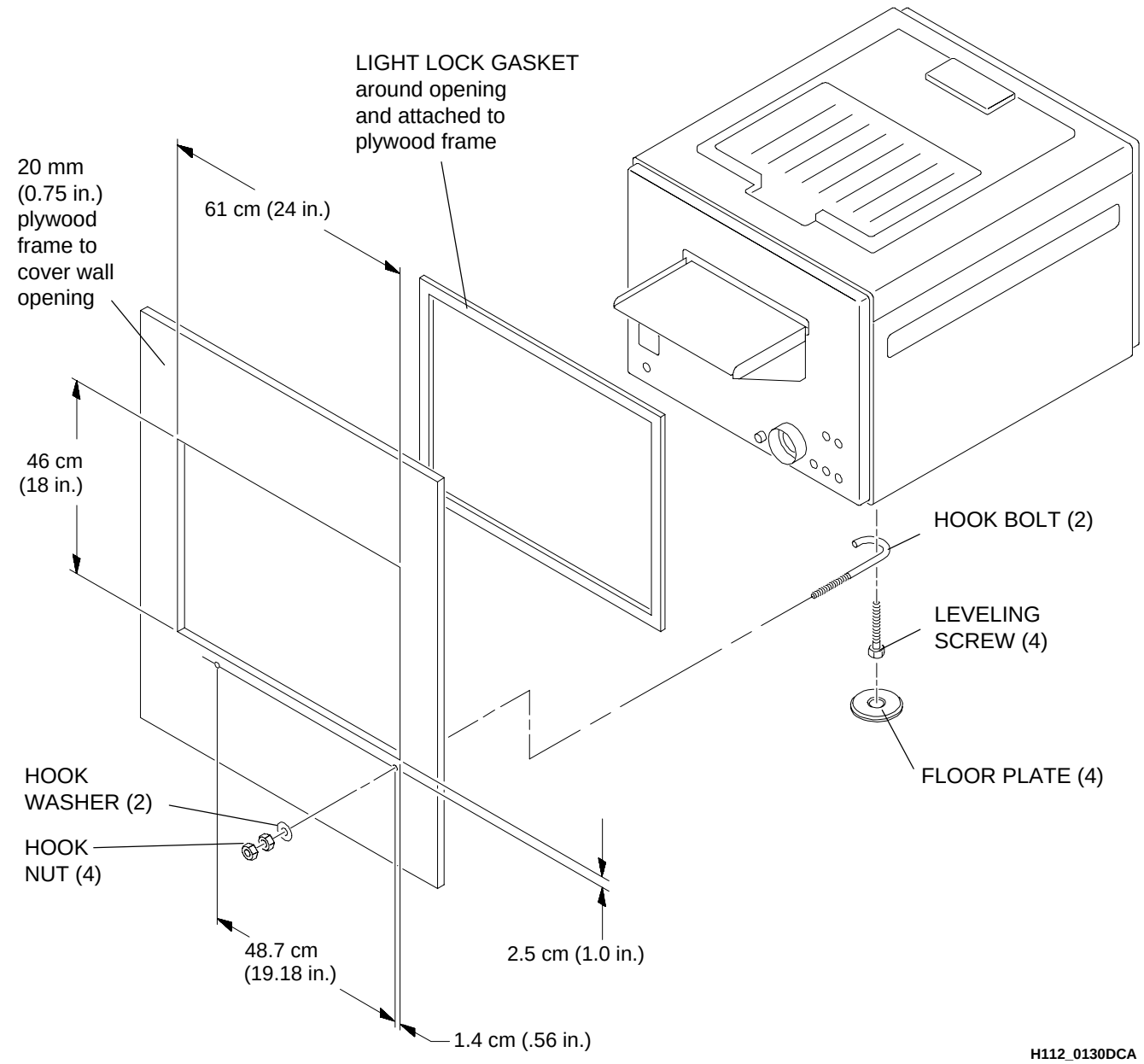
Note

The PROCESSOR may be installed with either the FEED SHELF or the RECEIVING BIN through the wall.



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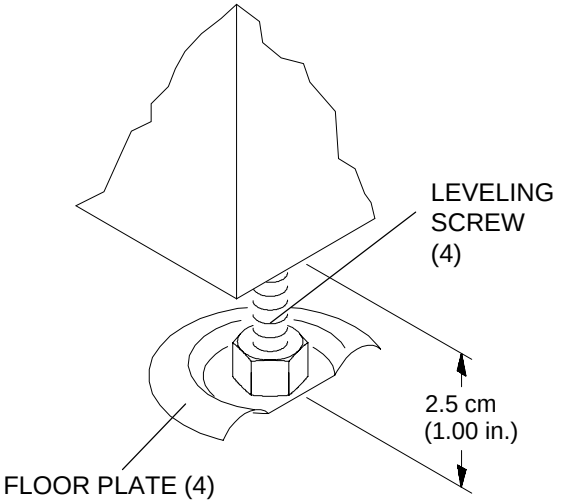
Warning

- The PROCESSOR weighs 90 kg (200 lb). Use qualified personnel to install this PROCESSOR.
- Do not pull the LIGHT LOCK GASKET too tightly.

[1] Install the LIGHT LOCK GASKET to the PLYWOOD FRAME. Do not stretch the LIGHT LOCK GASKET.

Leveling the PROCESSOR



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[1] Move the PROCESSOR into position.

[2] Install the 4 FLOOR PLATES under the LEVELING SCREWS or under the MOUNTING STAND.

Note

If using an M35/M43 MOUNTING STAND, bolt the PROCESSOR to the MOUNTING STAND and level the MOUNTING STAND.

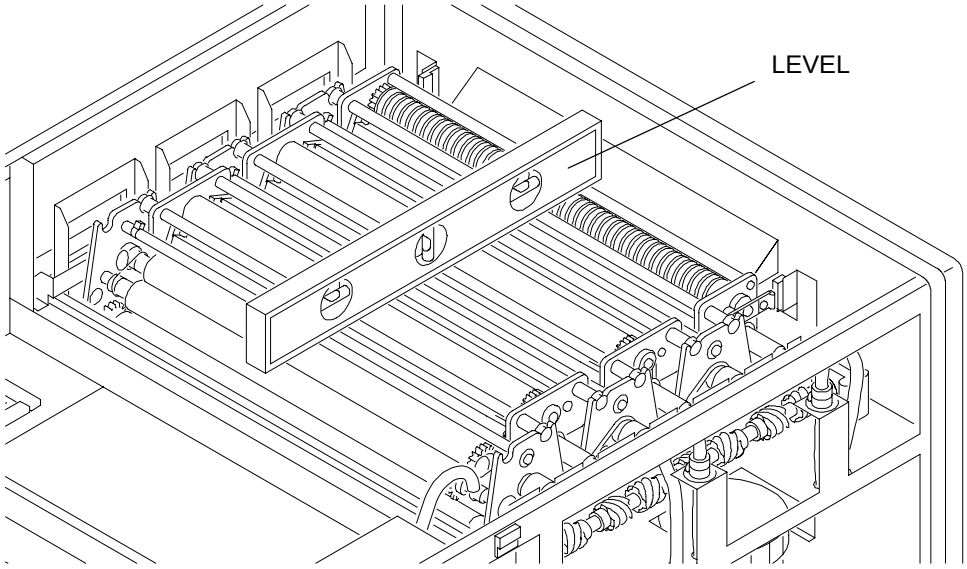
[3] Install the other RACKS and the CROSSOVER ASSEMBLIES.

[4] Place the LEVEL on the CROSSOVER ASSEMBLIES, not on the walls of the PROCESSOR.

[5] Level the PROCESSOR side-to-side and then end-to-end.

[6] Install the 2 HOOK BOLTS around the front 2 LEVELING SCREWS and through the wall. See the figure on Page 13.

[7] Install the 4 HOOK NUTS and the 2 HOOK WASHERS on the 2 HOOK BOLTS.



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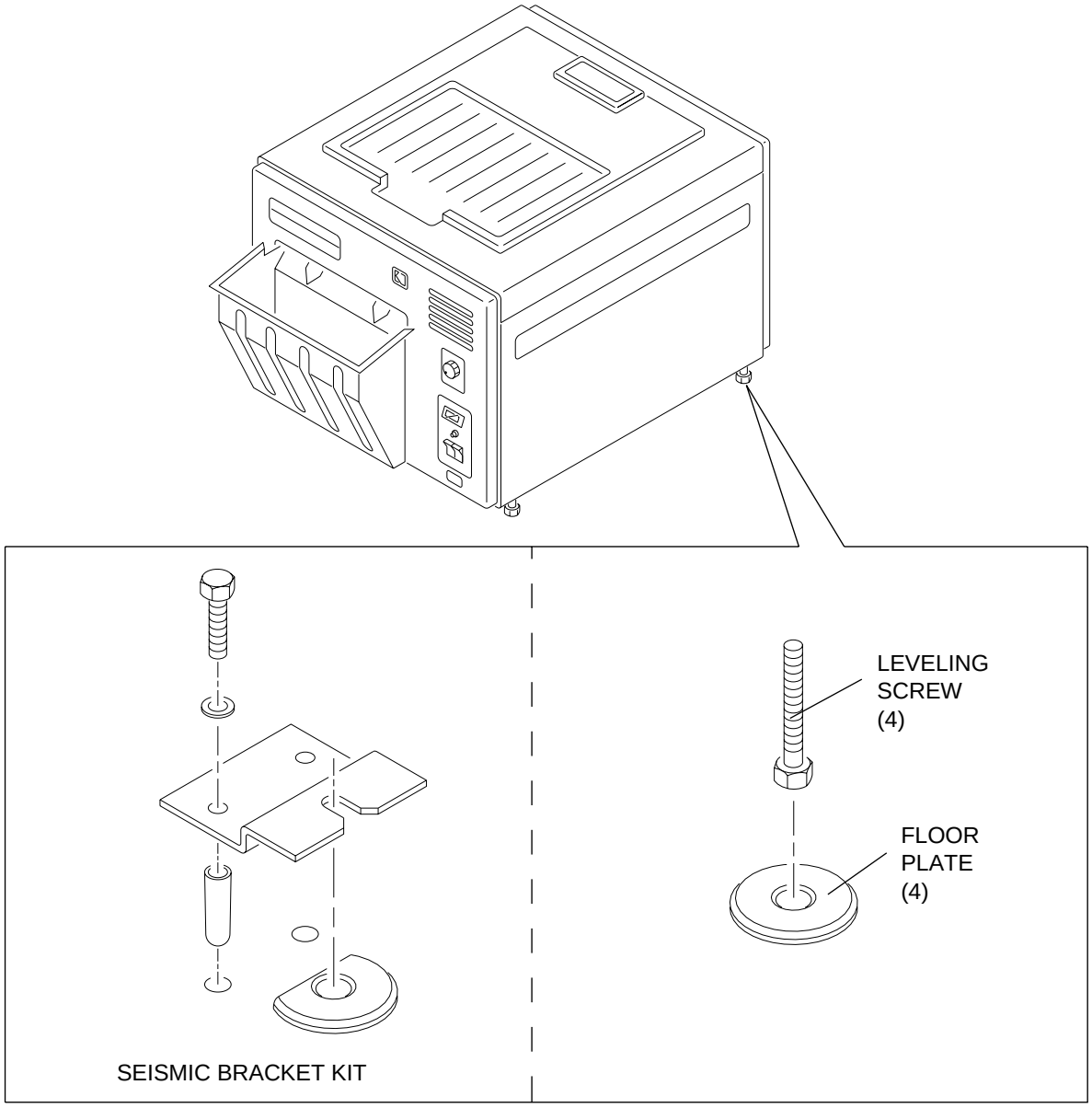
Installing SEISMIC BRACKETS



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Important

Local building codes may require that SEISMIC BRACKETS be used.

[1] Install SEISMIC BRACKETS to the PROCESSOR or to the MOUNTING STAND if required by local codes. A Seismic Bracket Kit, Part No. 261413, is available.

Section 5: Connecting the Plumbing

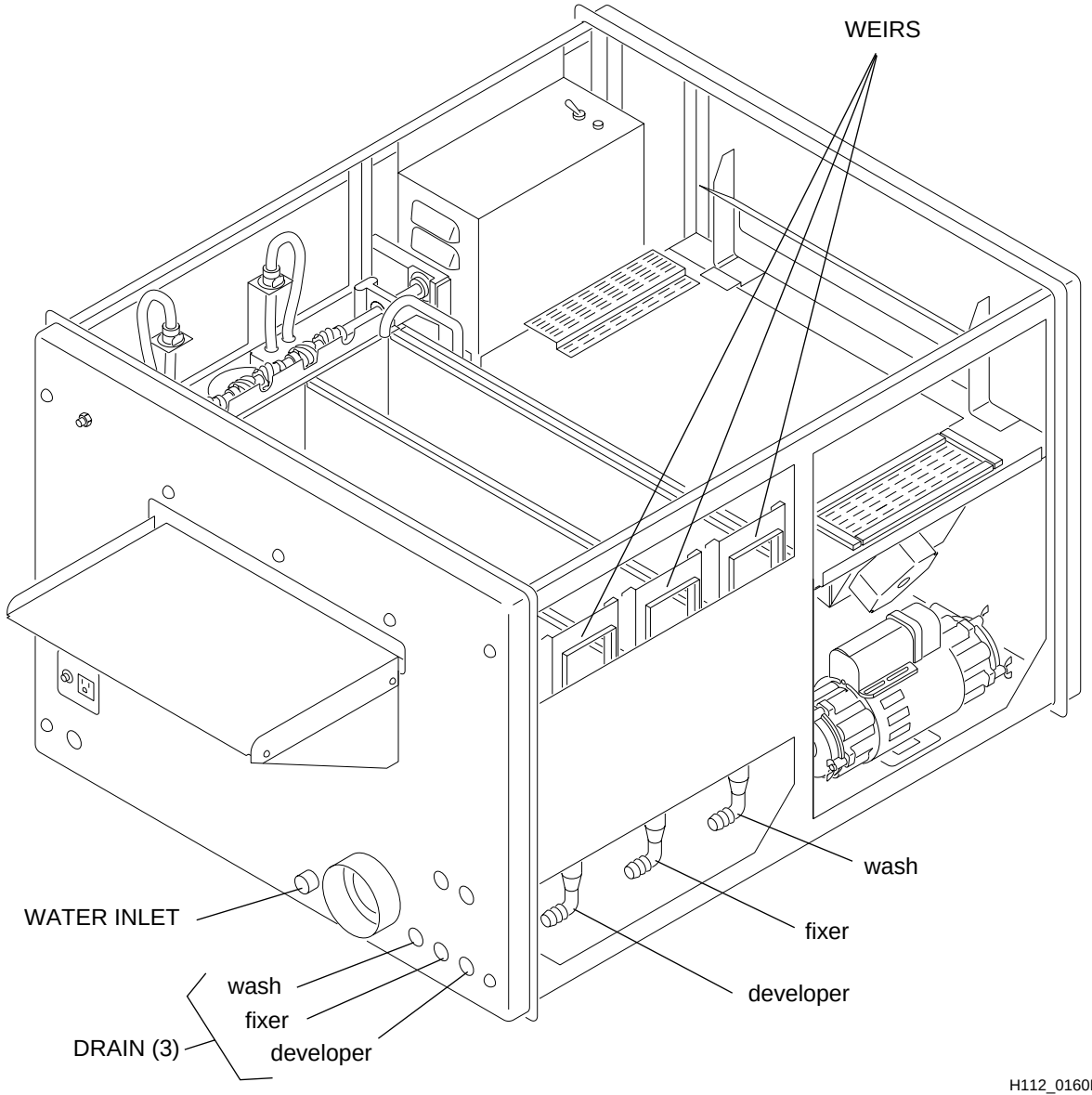
Warning

- Drains must be made of chemically resistant, non-corrosive material. Use PVC or the equivalent.
- The drain must have a minimum diameter of 7.6 cm (3 in.) and be free of obstruction.
- Drain service must comply with all local codes.
- Do not make a solid connection to the FLOOR DRAIN. Use an open FLOOR DRAIN with a minimum clearance of 2.5 cm (1 in.) between the tubing from the PROCESSOR and the FLOOR DRAIN.

[1] Check that the developer and fixer WEIRS are installed correctly.

[2] Use ½ -in. (1.27 cm) ID tubing, Part No. 760476, to connect the developer, fixer, and wash DRAINS to the FLOOR DRAIN. See the figure on Page 18. Order the tubing by the foot.

[3] Connect the incoming water supply to the WATER INLET of the PROCESSOR.



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Section 6: Connecting the REPLENISHMENT TANKS to the REPLENISHMENT PUMPS and the SILVER RECOVERY UNIT

Caution

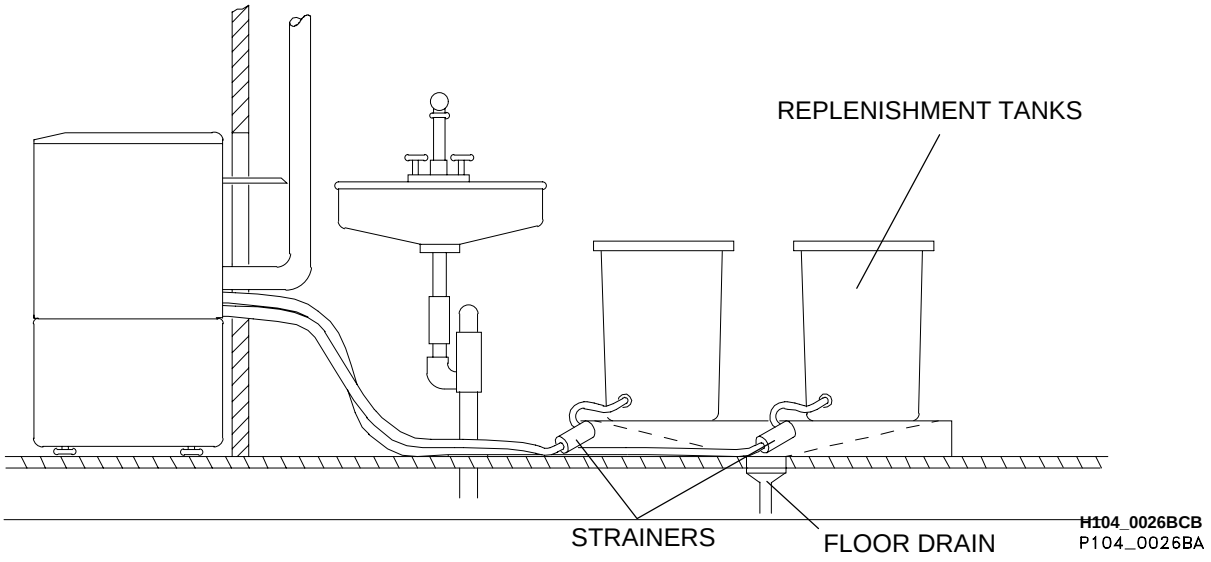
- Do not allow water in the tubing from the REPLENISHMENT TANKS.
- The highest solution level in the REPLENISHMENT TANKS must be below the solution level in the processing TANKS.
- Maximum solution level is 97 cm (38 in.) with the PROCESSOR installed on an M35/M43 MOUNTING STAND.

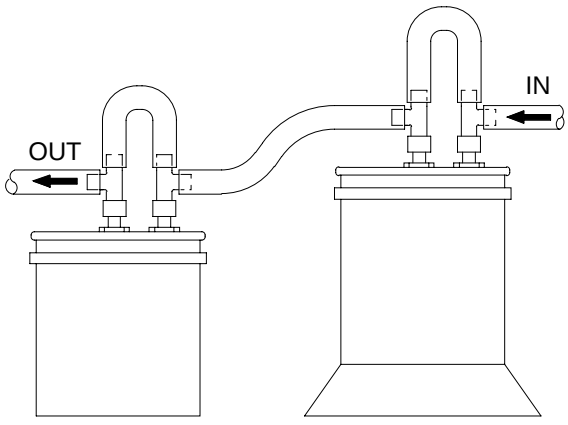
[1] Check that the connections in the tubing are tight.

[2] Install the 2 STRAINERS in the tubing between the REPLENISHMENT PUMP and the REPLENISHMENT TANKS. Use the ⅜ -in. (9.5 mm) TUBING supplied.

[3] Connect the TUBING from the PUMPS to the processing TANKS.

[4] Check that the REPLENISHMENT TANKS are connected to the correct processing TANKS.





SILVER RECOVERY UNIT

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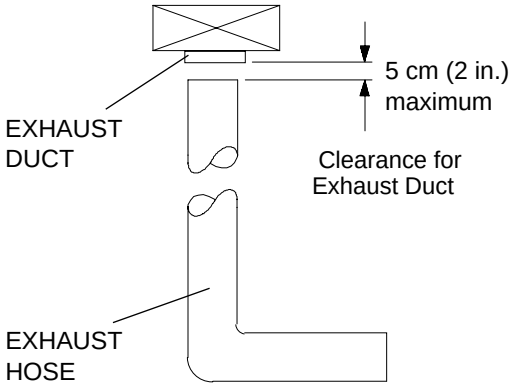
[5] Connect the SILVER RECOVERY UNIT to the fixer DRAIN with ½ -in. (1.27 cm) ID tubing.

Section 7: Environmental Requirements

Connecting the EXHAUST HOSE



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Caution

The building ventilation system must draw air to the outside of the building, so that no air is reused.

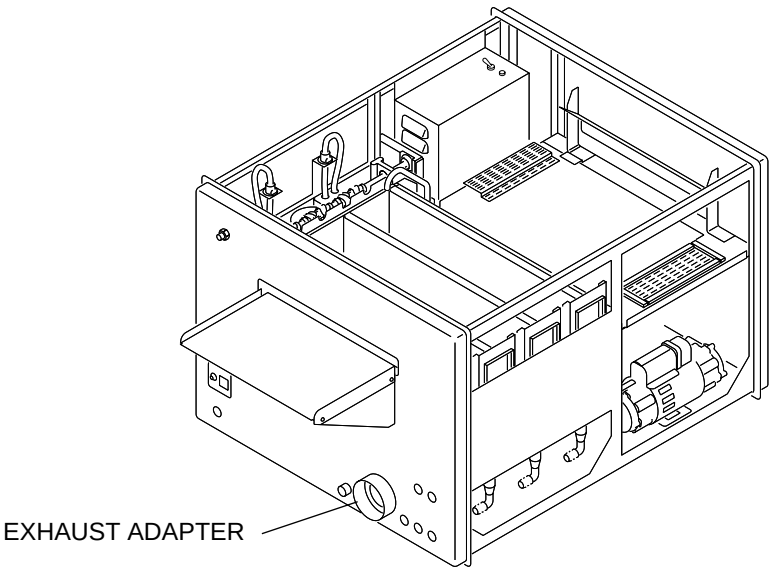
[1] Connect a 7.6 cm (3 in.) EXHAUST HOSE, not supplied, to the EXHAUST ADAPTER.

[2] Connect the EXHAUST HOSE to the EXHAUST DUCT from the building ventilation system.

[3] Leave a 5 cm (2 in.) air gap between the EXHAUST HOSE and the EXHAUST DUCT.

Important

- If the venting is not correct, fumes will corrode equipment and cause artifacts. Do not install the PROCESSOR or accessories if the venting is not correct.
- The building ventilation system must draw air to the outside of the building, so that no air is reused.
- The AIR FLOW is correct when the fumes are flowing out of the PROCESSOR through the EXHAUST HOSE. Before installing the PROCESSOR, or at the next service call, do the following to check that the AIR FLOW is correct.



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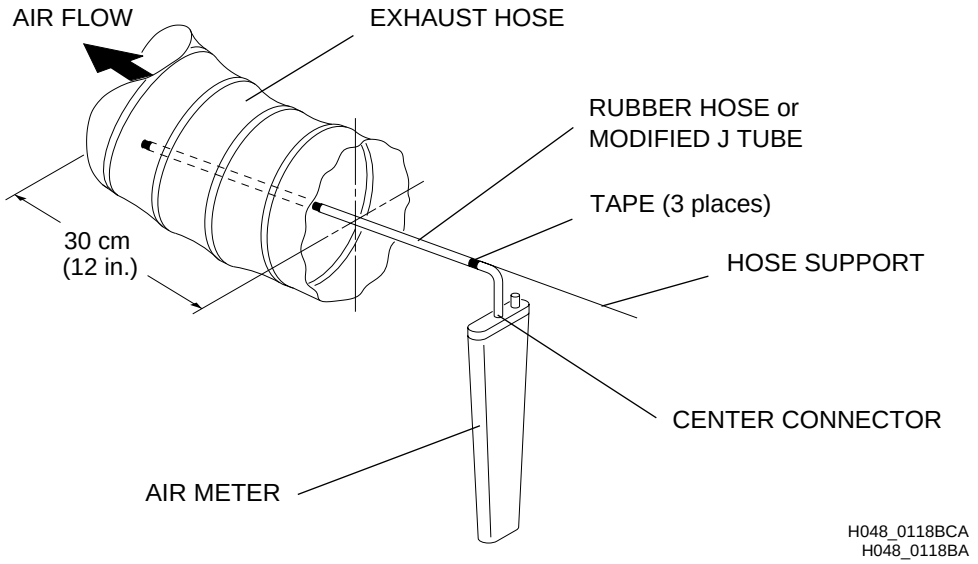
Checking the Ventilation

Important

- If the venting is not correct, fumes will corrode the equipment. Do not install the PROCESSOR or accessories if the venting is not correct. Check local codes for venting requirements.
- The air flow is correct when the fumes are flowing from the PROCESSOR through the EXHAUST HOSE. Before installing the PROCESSOR, or when checking the static pressure later, do the following procedure to check that the air flow is correct.



Use an AIR METER TL-2431, to check that the venting is correct.

[1] If the PROCESSOR is installed, de-energize the PROCESSOR.

[2] Disconnect the EXHAUST HOSE from the EXHAUST ADAPTER on the PROCESSOR.

[3] Place the RUBBER HOSE on the CENTER CONNECTOR of the AIR METER.

[4] If a replenishment J TUBE, Part No. 592380, is available, do the following. If not, advance to Step 5.

(a) Cut off and discard the curved portion of the replenishment J TUBE.

(b) Install the tapered end of the replenishment J TUBE into the RUBBER HOSE.

(c) Advance to Step 7.

[5] If a replenishment J TUBE is not available, align a HOSE SUPPORT, such as a straightened coat hanger, next to the RUBBER HOSE. The ends of the HOSE SUPPORT and the RUBBER HOSE must be together.

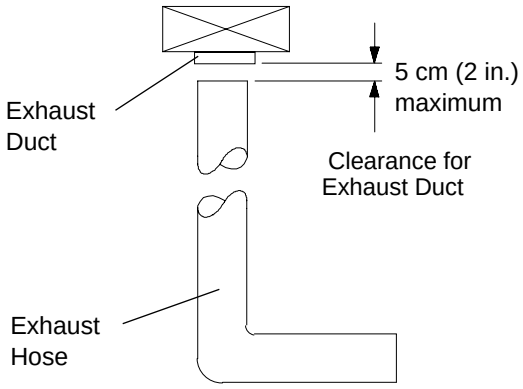
[6] Place tape around the HOSE SUPPORT and the RUBBER HOSE at 3 points. See the figure.

Important

The tape should not inhibit the air flow through the RUBBER HOSE.

[7] Insert the replenishment J TUBE or the RUBBER HOSE into the EXHAUST HOSE until the end is 30 cm (12 in.) from the end of the EXHAUST HOSE.

Measuring the Static Pressure		
Negative Static Pressure, Water Head		
Duct Diameter	**MIN**	**MAX**
76 mm (3 in.)	0.76 mm (0.03 in.)	1.02 mm (0.04 in.)
102 mm (4 in.)	0.25 mm (0.01 in.)	0.51 mm (0.02 in.)



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H104_0005AA

Important

The RUBBER HOSE or J TUBE must be in the center of the EXHAUST DUCT.

[8] Hold the AIR METER vertical, and record the average of several readings.

[9] Compare the average reading with the table:

[10] Adjust one of the following to obtain the required reading:

(a) the damper (or fan) in the building ventilation system or

(b) the clearance between the EXHAUST DUCT and the EXHAUST HOSE to 5 cm (2 in.); see the figure.

[11] If the air flow reading is still not correct, contact the sales representative and the customer to correct the venting.

[12] When the air flow reading is the same as the measurements in the table, connect all the hoses.

[13] If the PROCESSOR has been installed, install the COVERS and PANELS on the PROCESSOR.

Important

- Inform the customer that all COVERS and PANELS must be installed while the PROCESSOR is energized.
- The darkroom should have 10 room air exchanges per hour.
- If the PROCESSOR is installed through the darkroom wall, it is most important that the air pressure in the darkroom is greater than the air pressure of the area surrounding the darkroom.

[14] Do the following to check the air flow at the FEED SHELF:

(a) If the PROCESSOR is installed, de-energize the PROCESSOR.

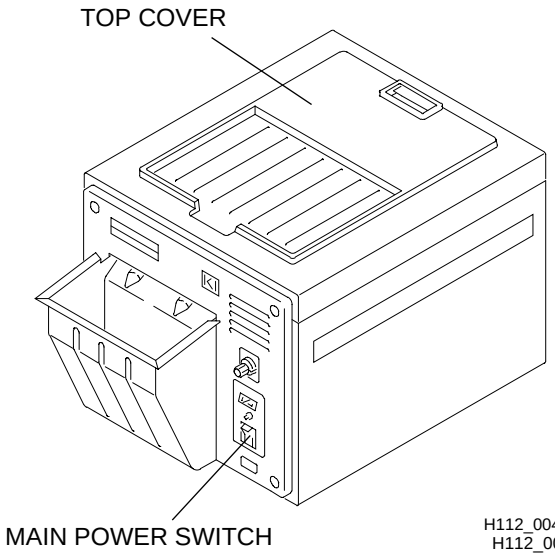
(b) Hold a piece of tissue paper in front of the FEED SHELF.

Note

The air flow should be toward the PROCESSOR.

(c) If the tissue paper moves away from the PROCESSOR, call Customer Service for Health Imaging, Monday through Friday from 8:00 a.m. to 5:00 p.m. (Rochester, New York, time) at (800) 336-4722.

Section 8: Connecting the Main Power for an M35A-M PROCESSOR, 120 Volts Only



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H112_0043AC

Warning

- Dangerous voltage.
- Possible damage from electrostatic discharge.

[1] Check and use the Local Electrical Codes.

[2] Consult with the customer about installing the POLARIZED RECEPTACLE.

[3] Turn off the power to the wall outlet where the POLARIZED RECEPTACLE will be installed.

[4] Install, or have the customer install, the POLARIZED RECEPTACLE.

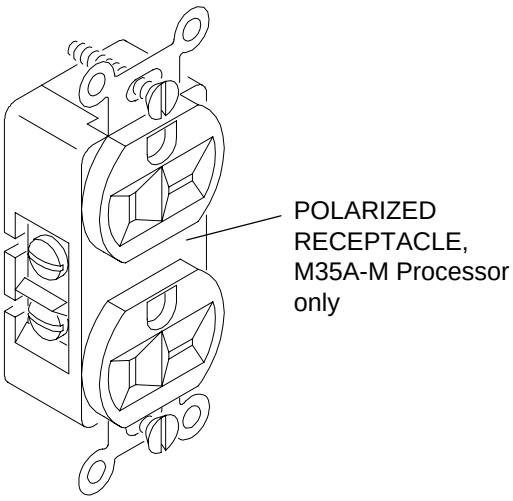
Note

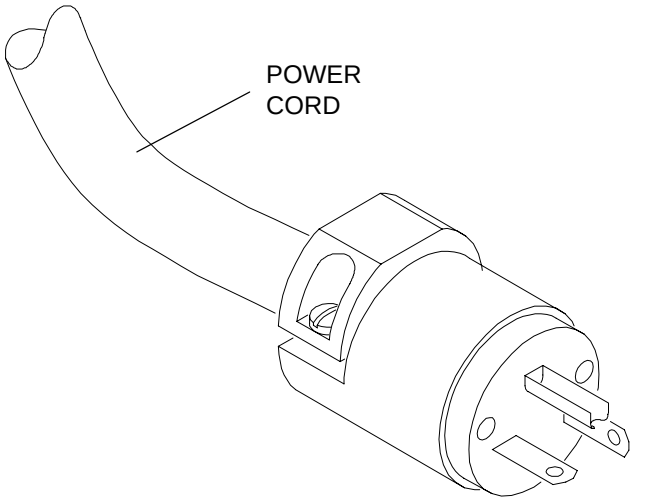
The COVER PLATE is not supplied.

[5] Move the MAIN POWER SWITCH on the PROCESSOR to the “OFF” position.

[6] Plug the POWER CORD into the POLARIZED RECEPTACLE.

Connecting the Main Power to an M35A-M PROCESSOR





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Section 9: Connecting the POWER CORD on an M35-M PROCESSOR, 220 Volts Only

Warning

- Dangerous voltage.
- Possible damage from electrostatic discharge.

[1] Check and use the Local Electrical Codes.

[2] Disconnect the main power at the wall.

[3] Move the MAIN POWER SWITCH to the “OFF” position.

[4] Remove the TOP COVER and the drive SIDE PANEL, not shown.

[5] Open the DOOR to the ELECTRICAL BOX.

[6] Move wire No. 8A to the correct terminal on TB5. See the figure on Page 24.

[7] Move JUMPER 8:

Volts	Position of Jumper 8
200 or 208	TB5-2
220	TB5-3
240	TB5-4

[8] Apply the correct DATA STRIP inside the ELECTRICAL BOX DOOR to indicate the correct supply voltage.

[9] Install the STRAIN RELIEF BRACKET inside the PROCESSOR. See the figure below.

[10] Feed the CABLE through the FRONT PANEL.

[11] Insert the CABLE through the STRAIN RELIEF.

[12] Install the STRAIN RELIEF to the STRAIN RELIEF BRACKET with the NUT.

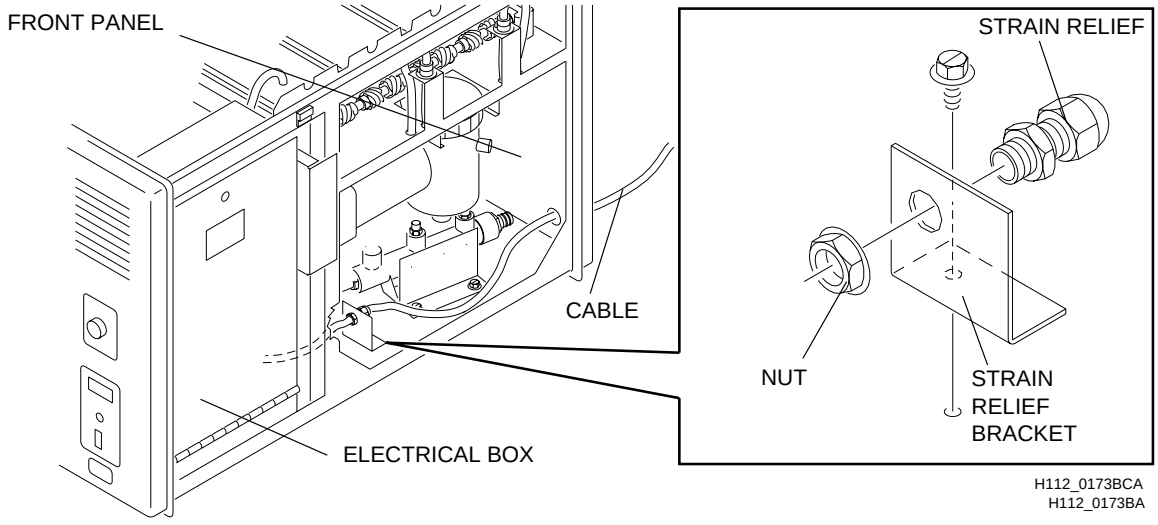
[13] Feed the CABLE into the ELECTRICAL BOX.

[14] Connect the incoming wires to L1, L2, and N of TB1. See the connection charts on the circuit diagrams that start on Page 25.

[15] Connect the ground wire to the GROUND LUG, not shown.

[16] Install the 2 WIRE TIES to the CABLE and the STRAIN RELIEF.

[17] Close the DOOR to the ELECTRICAL BOX, and install the drive SIDE PANEL and the TOP COVER.



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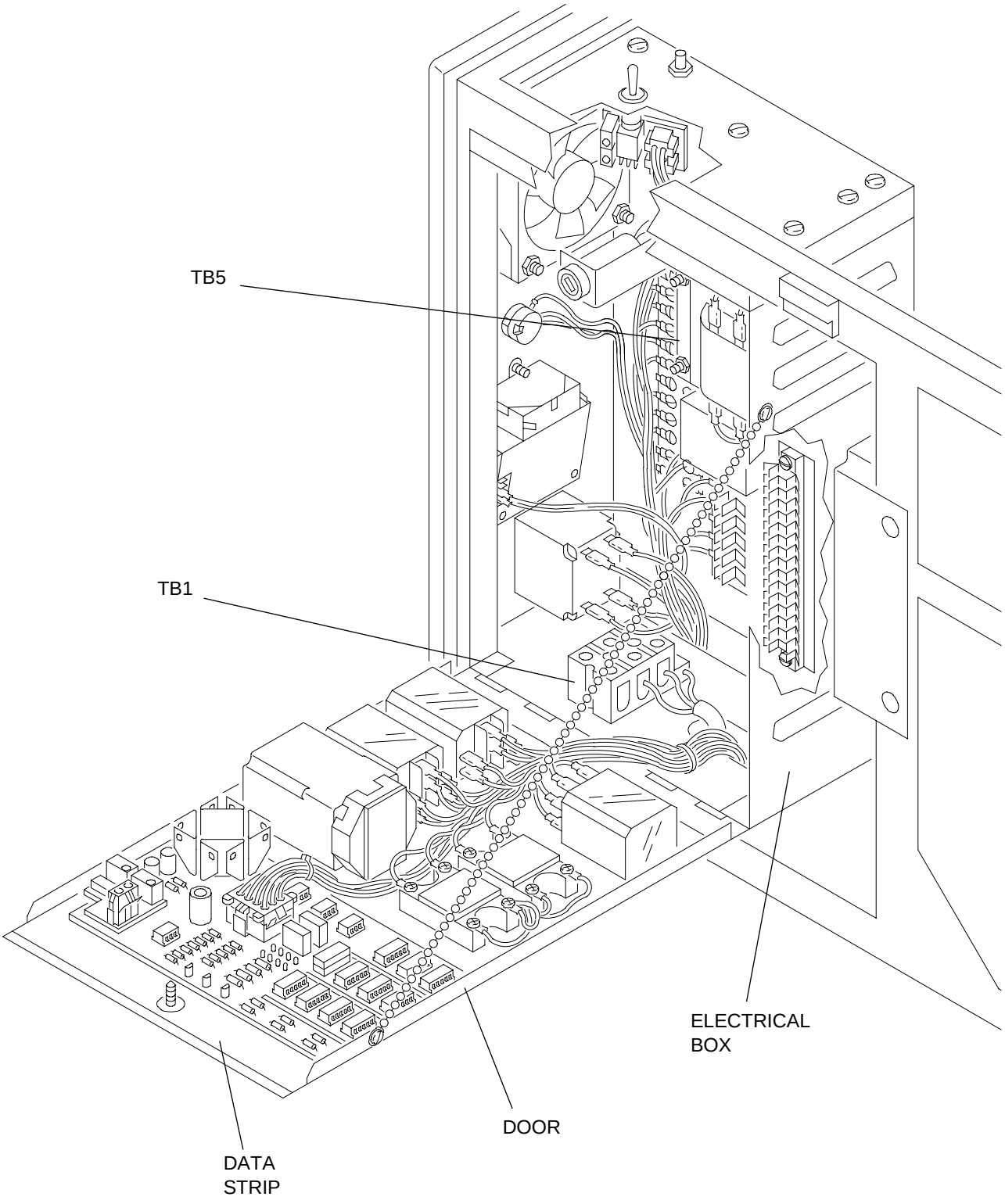
Connecting the 220 Volt POWER CORD



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Section 10: Circuit Diagrams

Processor	Diagram	See Page
M35-M	Circuit Diagram, Sheet 1 of 2	25
M35-M	Circuit Diagram, Sheet 2 of 2	25
M35A-M	Circuit Diagram	25

Page 26 - Circuit Diagram, M35-M Processor, Sheet 1 of 2

Circuit Diagram, M35-M Processor, Sheet 2 of 2 - Page 27

Page 28 - Circuit Diagram, M35A-M Processor

Section 11: Preparing the PROCESSOR for Use

Checking the Tubing CLAMPS, TANKS, and RACKS

[1] Tighten and check all CLAMPS.

Caution

Check all CLAMPS 2 - 4 weeks after installing any new tubing. Tighten the CLAMPS if necessary. Although a CLAMP may be tight when tubing is installed, temperature changes or shrinkage of the plastic tubing will cause the CLAMP to loosen.

[2] Check that the 3 WEIRS are installed and fully seated:

red in the developer TANK

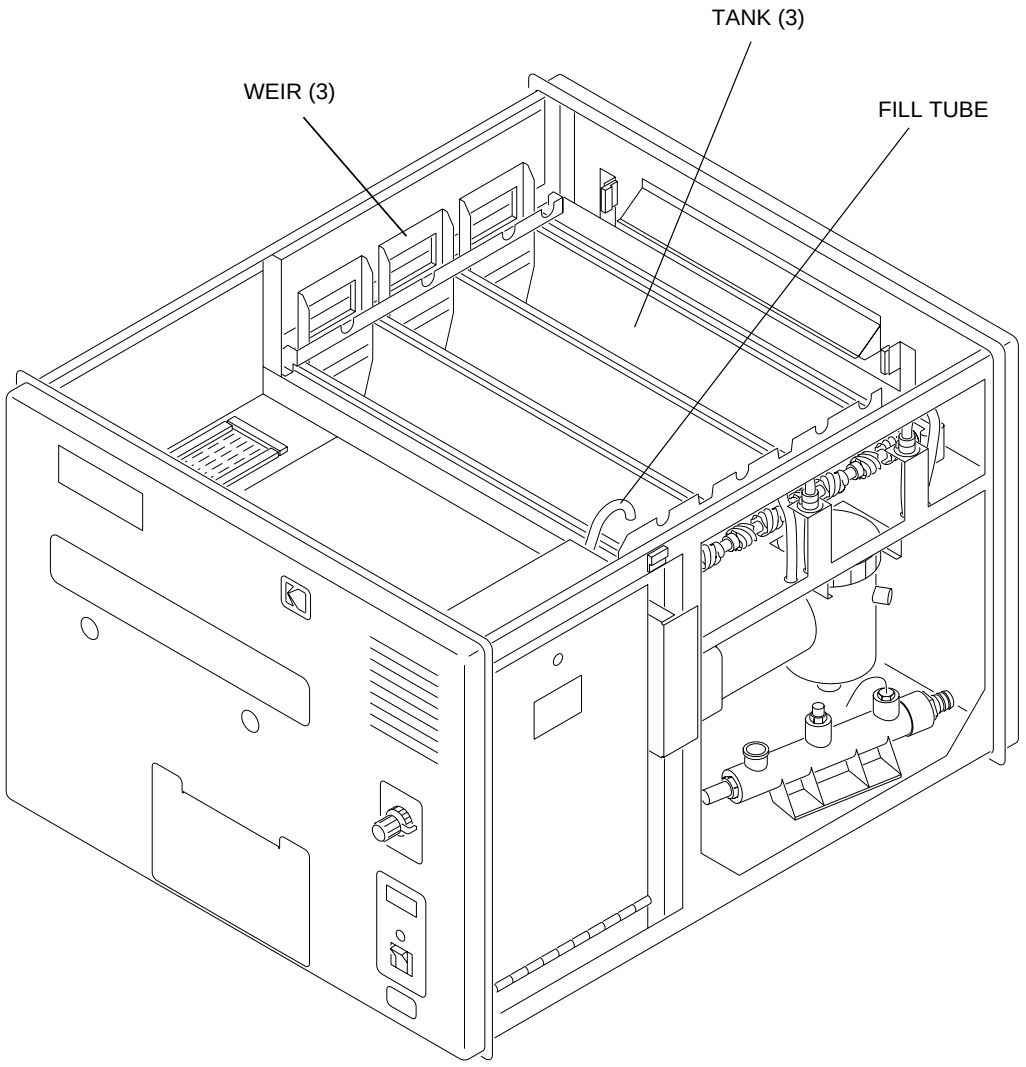
blue in the fixer TANK

beige in the wash TANK

[3] Fill the 3 TANKS with water.

[4] Operate the PROCESSOR for a few minutes, and check for leakage.

[5] Drain the PROCESSOR completely.



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H112_0154DA

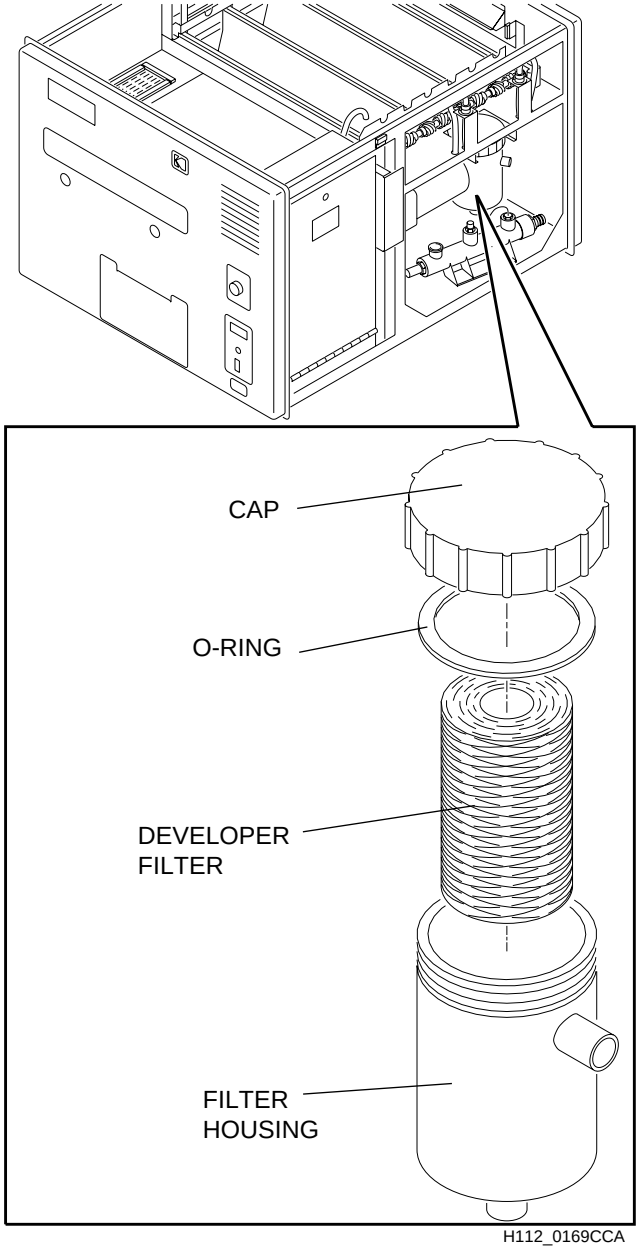
[6] Rinse the DEVELOPER, FIXER, and WASH RACKS with warm water.

[7] Rotate the ROLLERS manually to check that the ROLLERS rotate fully.

[8] Check that all the moving parts engage correctly.

[9] Wait to install the RACKS until Page 32.

Filling the TANKS



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[1] Soak the DEVELOPER FILTER for 30 seconds in warm water.

[2] Insert the DEVELOPER FILTER into the FILTER HOUSING.

[3] Check that the O-RING is seated correctly, or leakage may occur.

[4] Tighten the CAP and install the FILTER HOUSING in the PROCESSOR.

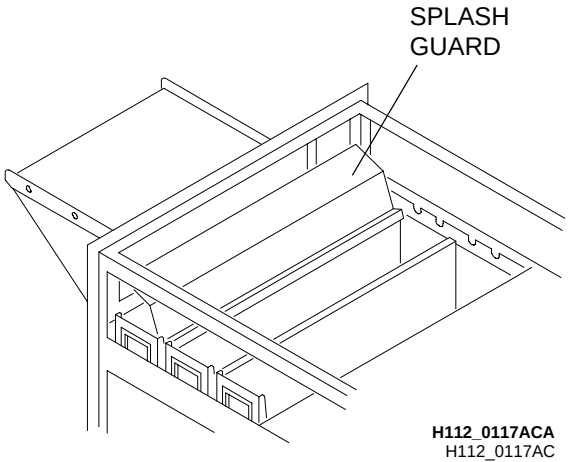
[5] Check that the tubing is not kinked.

Caution

To avoid contamination of the solutions:

- Rinse the mixing and filling equipment before each use.
- Mix the developer first, then the fixer.
- Fill the FIXER TANK first.
- Wash the mixing equipment thoroughly between solutions.

[6] Install the SPLASH GUARD between the DEVELOPER TANK and the FIXER TANK.



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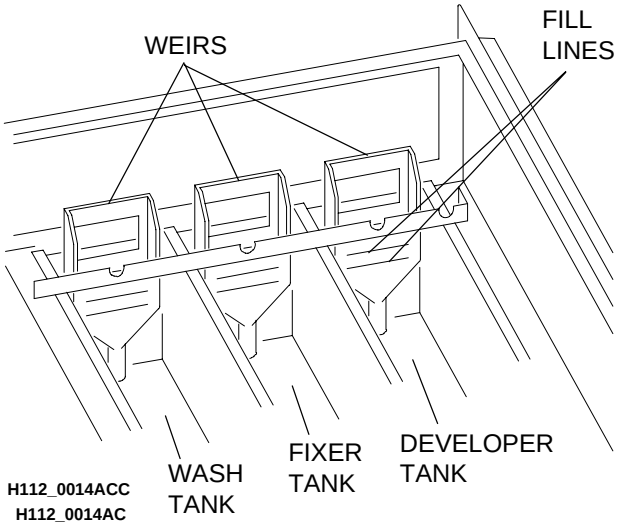

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[7] To fill the FIXER TANK, add FIXER REPLENISHER until the solution is at the higher FILL LINE on the blue WEIR.

[8] Remove and rinse the SPLASH GUARD.

[9] Install the SPLASH GUARD over the FIXER TANK.

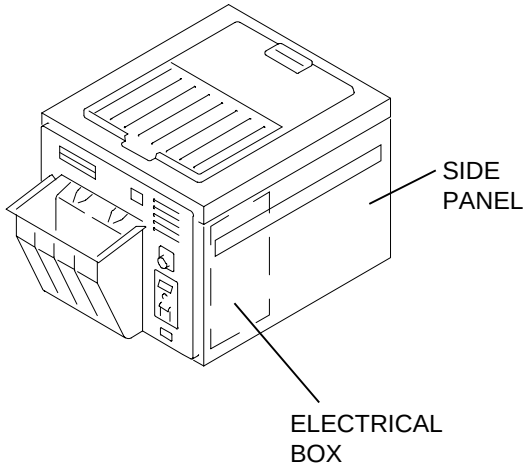
[10] To fill the DEVELOPER TANK:

- **(a)** Fill the DEVELOPER TANK half full of DEVELOPER REPLENISHER from the REPLENISHMENT TANK.
- **(b)** Add 190 mL (6.5 fl oz) of *Kodak* RP *X-Omat* DEVELOPER STARTER.
- **(c)** Fill the DEVELOPER TANK to the higher FILL LINE on the red WEIR with DEVELOPER REPLENISHER.

[11] Remove the SPLASH GUARD and rinse it thoroughly.

[12] Allow the developer to reach the operating temperature before processing any film.

Removing the REPLENISHMENT PUMP TIMER, for Very Low Volume Use Only



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Important

The PROCESSOR is shipped with the REPLENISHMENT PUMP TIMER installed.

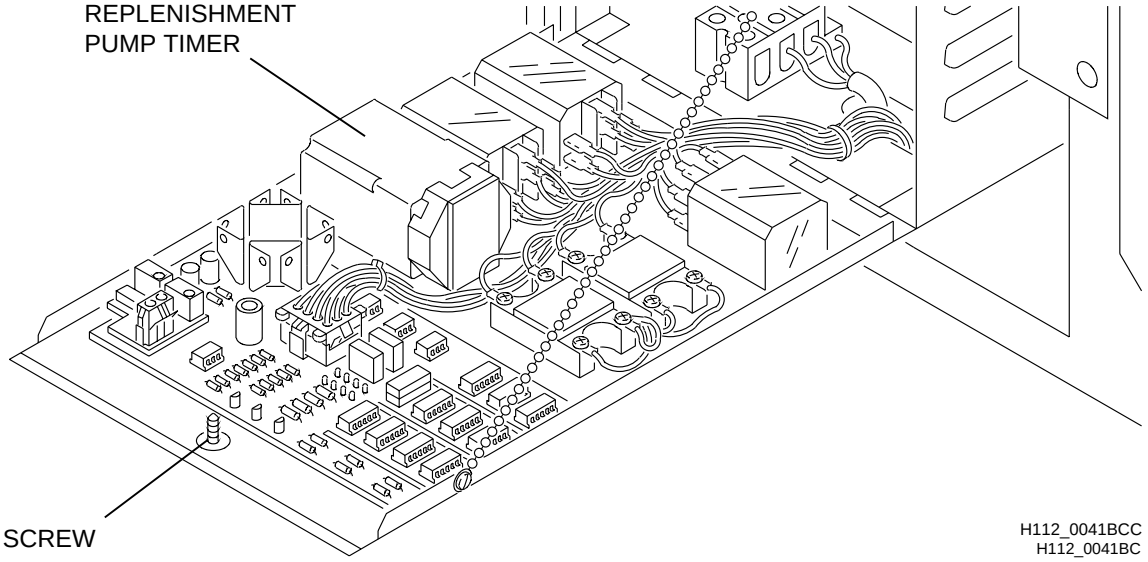
[1] Skip this procedure if processing less than 30 sheets of film per 8 hours in this PROCESSOR. Advance to Page 29.

[2] Remove the drive SIDE PANEL.

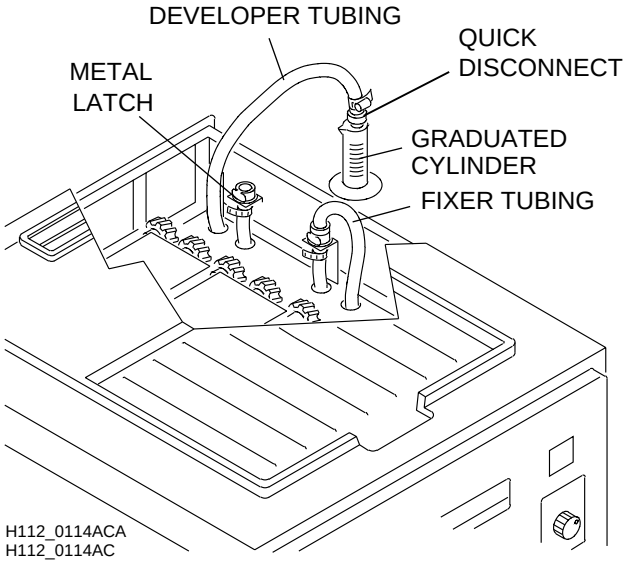
[3] Open the ELECTRICAL BOX by loosening the SCREW.

[4] Remove the REPLENISHMENT PUMP TIMER.

[5] Close the ELECTRICAL BOX.



Checking the Replenishment Flow Rates



[1] Remove the TOP COVER if installed.

[2] Lift the top ROLLER of the DETECTOR CROSSOVER ASSEMBLY.

[3] Check that the replenisher solutions flow freely through the TUBING along the drive side of the PROCESSOR.

[4] Press the METAL LATCH on the red QUICK DISCONNECT to disconnect the developer TUBING.

[5] Pull the TUBING slightly by rotating the TUBING over the edge of the frame.

[6] Insert the TUBING into a GRADUATED CYLINDER.

[7] Lift the top ROLLER of the DETECTOR CROSSOVER ASSEMBLY for the correct time. See the table on the next page.

Note

The REPLENISHMENT PUMP will operate 3 seconds after you release the ROLLER.

[8] Check that the amount of developer in the GRADUATED CYLINDER is the same as in the table.

[9] If necessary, adjust the REPLENISHMENT PUMP. See Page 31.

[10] If necessary, do Steps 7 - 9 again.

[11] Connect the QUICK DISCONNECT.

[12] Do this procedure again with the fixer TUBING to check the flow rate of the fixer.

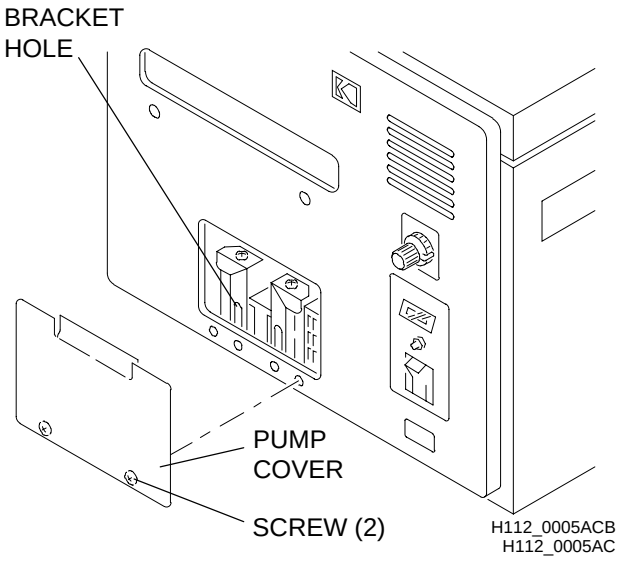
Film Size Processed	Use Condition	Average Amount of Film per 8 Hours of Processor Operation	Replenishment Flow Rate			
			mL per 35 cm (14 in.) 28 sec of Film Travel		mL per 43 cm (17 in.) 34 sec of Film Travel	
			Developer	Fixer	Developer	Fixer
Only 35 x 35 cm (14 x 14 in.) film	High	90 sheets or more	50	70	-	-
	Medium	31 - 89 sheets	65	85		
	Low	30 sheets or less	80	100		
Average size film intermix	High	115 sheets or more	50	70	-	-
	Medium	41 - 114 sheets	65	85		
	Low	40 sheets or less	80	100		
Only 35 x 43 cm (14 x 17 in.) film	High	75 sheets or more	-	-	60	85
	Medium	26 - 74 sheets			80	100
	Low	25 sheets or less			100	120

Film Size Processed	Use Condition	Average Amount of Film per 8 Hours of Processor Operation	Replenishment Flow Rate			
			mL per 24 cm 26 sec of Film Travel in Standard Mode		mL per 24 cm 36 sec of Film Travel in Extended Mode	
			Developer	Fixer	Developer	Fixer
Only 18 x 24 cm *Kodak Min-R* E Film	High	150 sheets or more	-	-	20	30
	Medium	60 - 149 sheets			27	35
	Low	59 sheets or less			35	40
Only 18 x 24 cm *Kodak Min-R* M Film	High	150 sheets or more	30	30	-	-
	Medium	60 - 149 sheets	30	35		
	Low	59 sheets or less	35	40		
Only 18 x 24 cm *Kodak Min-R* H Film	High	150 sheets or more	50	30	-	-
	Medium	60 - 149 sheets	50	35		
	Low	59 sheets or less	50	40		
Only 18 x 24 cm *Kodak Min-R* 2000 Film	High	150 sheets or more	20	30	-	-
	Medium	60 - 149 sheets	20	35		
	Low	59 sheets or less	20	40		

Note

- *Kodak* RP *X-Omat* Chemicals are recommended.
- Replenishment rates are based on one sheet of 18 x 24 cm film. If feeding two sheets, double the replenishment rates.
- For best results, feed film consistently.
- Slight sensitometric changes will occur as subsequent films are processed through a freshly started process. This is known as “seasoning” and is normal with any photographic process. Process control targets may have to be adjusted slightly to compensate.
- For 30 sheets of film or less per day, flooded replenishment is recommended.
- Film travel time includes feed time plus an approximate 3-second delay.

Adjusting the REPLENISHMENT PUMP



[1] Remove the TOP COVER.

[2] Loosen the 2 SCREWS and remove the PUMP COVER.

[3] Actuate the DETECTOR SWITCH by lifting the top ROLLER of the DETECTOR CROSSOVER ASSEMBLY until the ADJUSTMENT SCREW is visible through the hole in the BRACKET.

[4] Loosen the SETSCREW.

Caution

Do not adjust the LOCKNUT on the other end of the ADJUSTMENT SCREW.

[5] Rotate the ADJUSTMENT SCREW to adjust the flow rate.

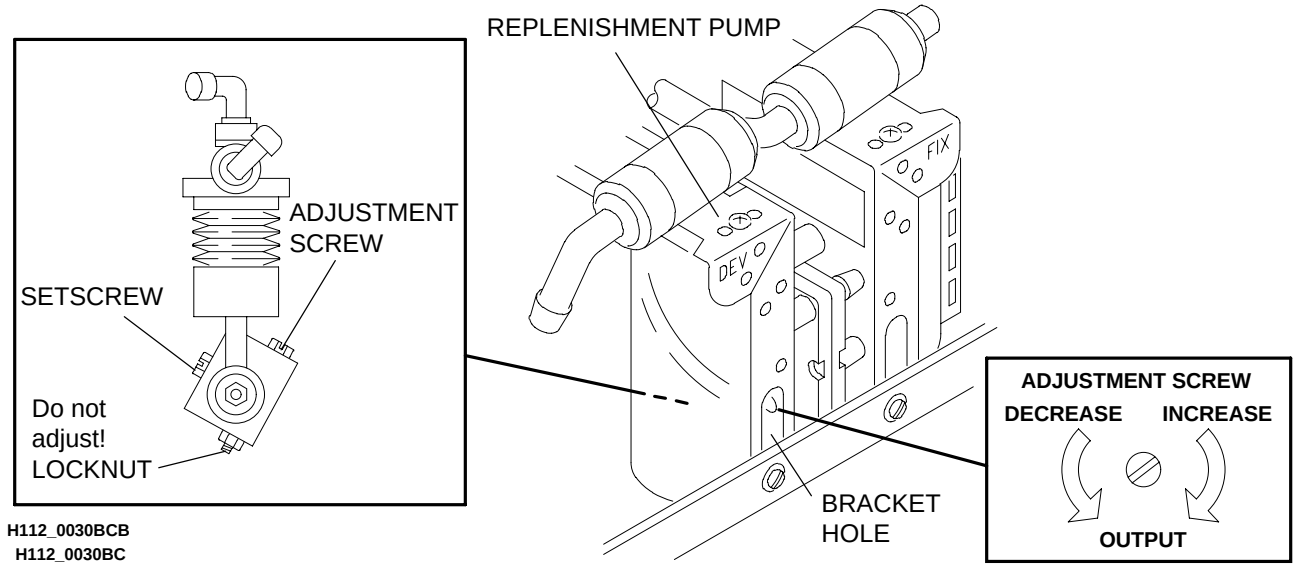
clockwise ↷	**increases** the flow rate
counterclockwise ↶	**decreases** the flow rate

[6] Tighten the SETSCREW.

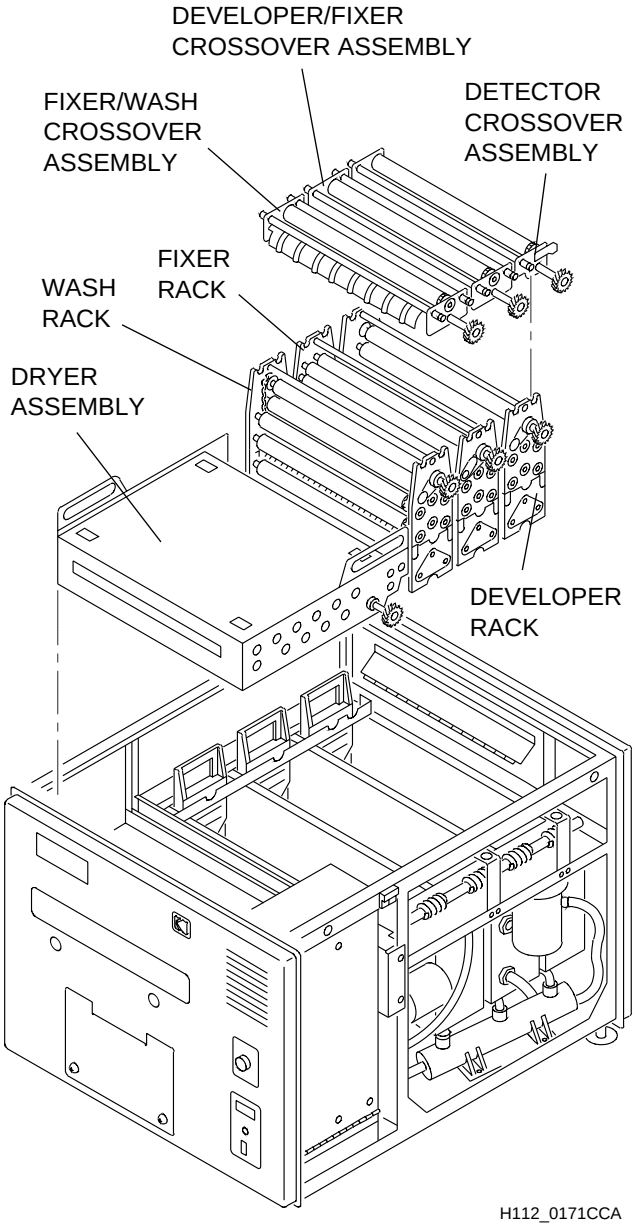
[7] Check the flow rates and, if necessary, do Steps 2 - 6 again. See the table on Page 30 for various replenishment rates.

[8] Install the TOP COVER and the PUMP COVER.

[9] Feed a sheet of film into the PROCESSOR to check that the REPLENISHMENT PUMPS operate correctly. If necessary, see the adjustment procedure for the DETECTOR SWITCHES in the Service Manual, Part No. 981901.



Installing the RACKS



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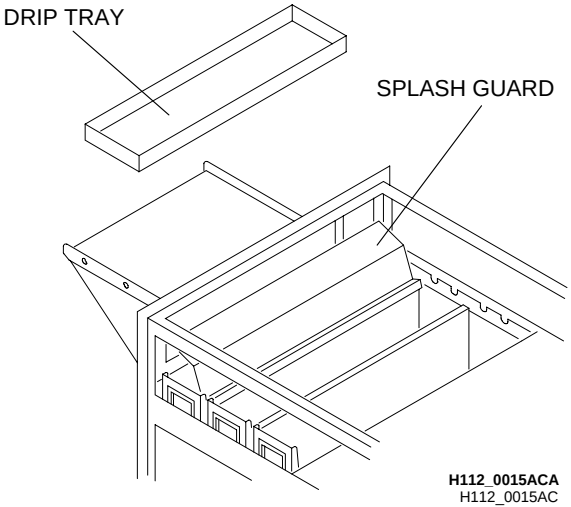

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Caution

Use the DRIP TRAY and SPLASH GUARD when you install or remove the RACKS. Lower the RACKS slowly.

[1] Install the RACKS in the correct TANKS. Seat them firmly.

Note

The WASHER on the top of the drive side of the DEVELOPER RACK has a “D” on it. The one on the FIXER RACK has an “F”. The RACKS may also have red, blue, and white wire ties for easy identification.

red DEVELOPER RACK
blue FIXER RACK
white WASH RACK

[2] Install the:

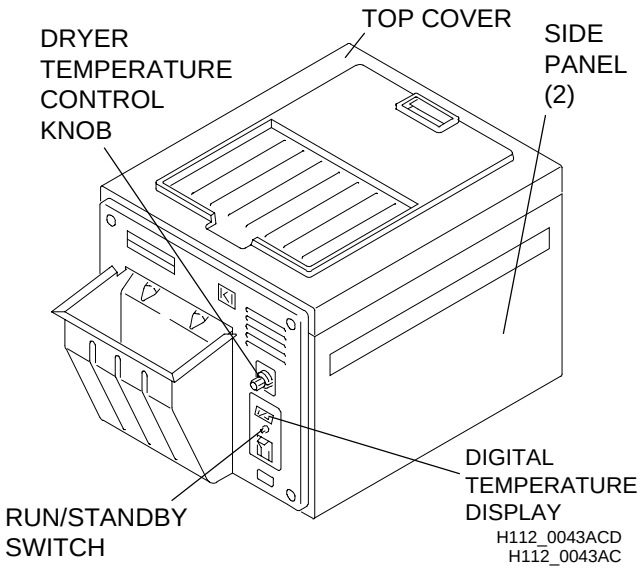
- DEVELOPER/FIXER CROSSOVER ASSEMBLY
- FIXER/WASH CROSSOVER ASSEMBLY
- DETECTOR CROSSOVER ASSEMBLY
- DRYER ASSEMBLY
- EVAPORATION COVERS, not shown

[3] Check that the gap in the developer RACK between the the GUIDE SHOES and the MASTER ROLLER is:

Gap between Shoes and Master Roller
0.020 in.

If necessary, adjust the GUIDE SHOES. See the procedure in the Service Manual, Publication Part No. 981901.

Checking the Operation of the PROCESSOR



[1] Turn on the water supply.

[2] Energize the PROCESSOR.

[3] Check that the:

- Developer and fixer have agitation
- No leakage occurs
- Solutions overflow into the WEIRS
- Water flows into the PROCESSOR

[4] Install the 2 SIDE PANELS and the TOP COVER.

[5] Check the operation of the RUN/STANDBY SWITCH.

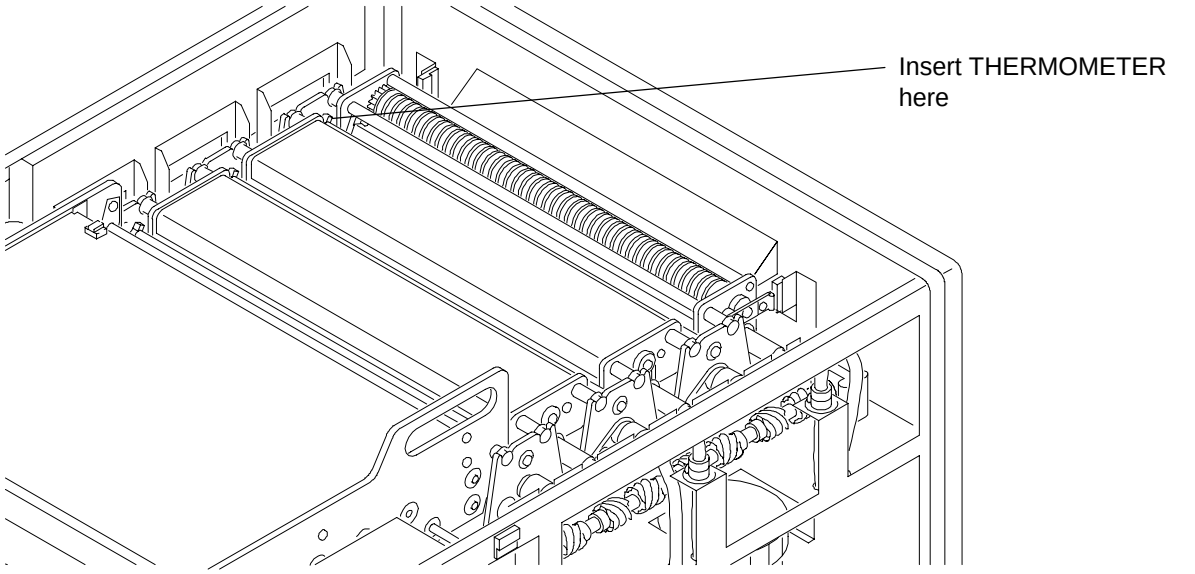
[6] Set the DRYER TEMPERATURE CONTROL KNOB to the minimum temperature necessary to provide dry film.

[7] Check that warm air comes out of the exhaust.

Note

- The PROCESSOR is now in the run mode.
- If checking both the Standard developer temperature and the Extended developer temperature, check for Standard Mode first. The correct temperatures are:
  Standard: 33.3˚C 0.3˚C (92.0˚F 0.5˚F)
  Extended: 35˚C 0.3˚C (95.0˚F 0.5˚F)

[8] Insert a THERMOMETER of known accuracy, such as Part No. 761217, into the nondrive side of the DEVELOPER TANK between the SIDE PLATE of the DEVELOPER RACK and the RACK SUPPORT.



Caution

- Possible damage from electrostatic discharge. Use an ESD WRIST STRAP.
- Use the POTENTIOMETER ADJUSTING TOOL TL-1481 to adjust R301 and R302.

[9] If a developer temperature adjustment is necessary, adjust R301 and R302 on the 300 CIRCUIT BOARD.

(a) Remove the drive SIDE PANEL from the PROCESSOR.

(b) Open the ELECTRICAL BOX.

(c) Use the POTENTIOMETER ADJUSTING TOOL TL-1481 to adjust the developer temperature by rotating R302 for Standard Mode or R301 for Extended Mode.

clockwise ↷	**increases** the temperature
counterclockwise ↶	**decreases** the temperature

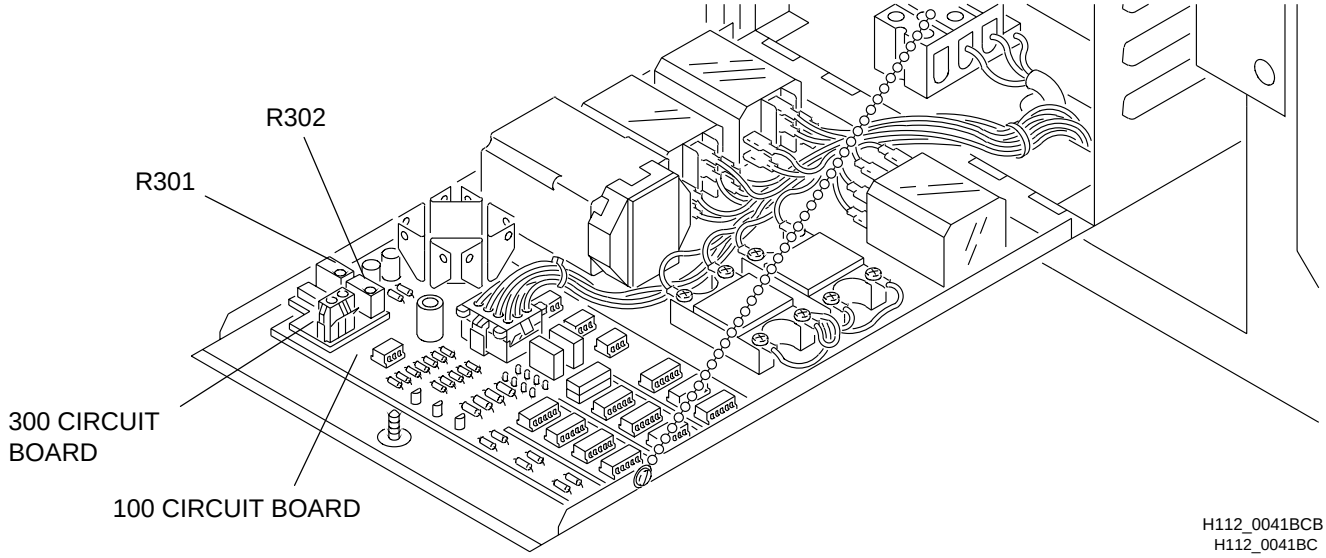
(d) Check the developer temperature in the DEVELOPER TANK with a THERMOMETER.

(e) If the developer temperature is not correct, do Steps (c) and (d) again.

Important

- After changing from Extended Mode to Standard Mode, set the DRYER TEMPERATURE CONTROL KNOB to “0” and remove the TOP COVER for venting. Check that the METER displays the correct temperature before adjusting R302 or processing film.
- Do **not** process film until the METER shows that the developer is at the correct temperature.

Adjusting the Developer Temperature on the 300 CIRCUIT BOARD by Rotating R302 for Standard Mode or R301 for Extended Mode



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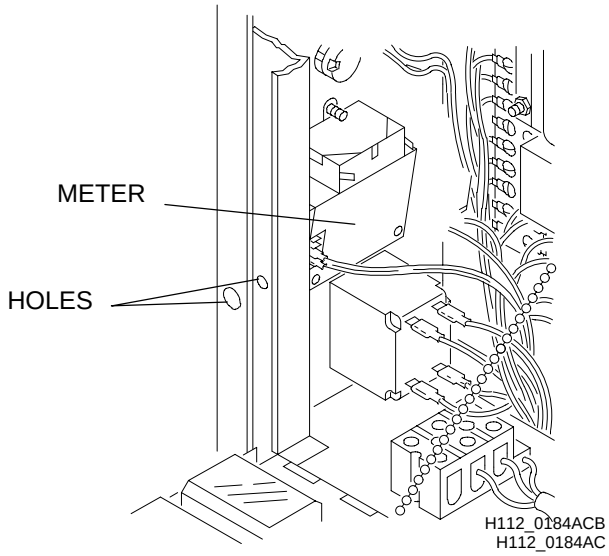
Adjusting the Potentiometer on the Developer Temperature METER



[10] If the METER does not display the same temperature as the THERMOMETER, adjust the METER.

(a) Remove the drive SIDE PANEL.

(b) Open the ELECTRICAL BOX.

(c) Check that CR10 on the 100 CIRCUIT BOARD is blinking.

(d) After CR10 has blinked for 2 minutes, insert the POTENTIOMETER ADJUSTING TOOL TL-1481 through the holes in the frame of the ELECTRICAL BOX.

(e) Rotate TL-1481 to adjust the METER.

clockwise ↷	**increases** the temperature display
counterclockwise ↶	**decreases** the temperature display

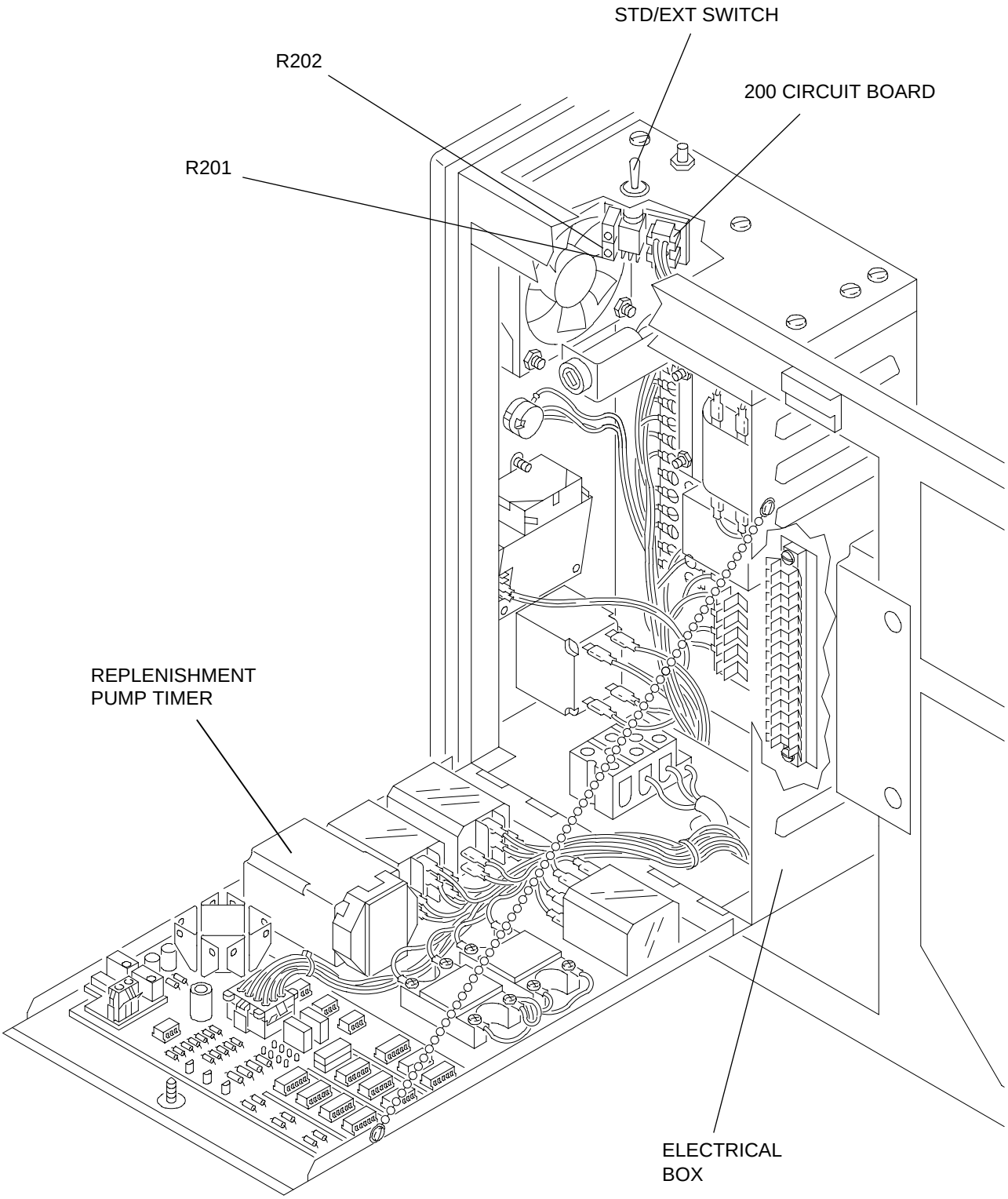
(f) Check the developer temperature with the THERMOMETER. If the temperature is not the same as on the METER, adjust the METER again.

[11] Close the ELECTRICAL BOX.

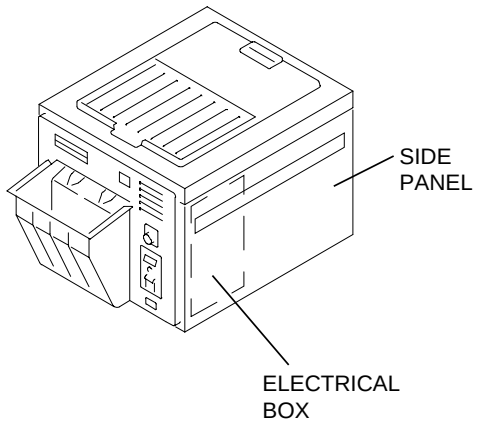
[12] Install the SIDE PANELS and the TOP COVER.

[13] Check the operation of the DETECTOR SWITCHES by feeding a sheet of film through the PROCESSOR to check that the REPLENISHMENT PUMP is operating.

Adjusting the Speed of the MAIN DRIVE MOTOR



H112_0187ECE
H112_0187EC



H112_0042ACC
H112_0042AC

[1] Determine the speed of the MAIN DRIVE MOTOR.

(a) Process sheets of 24 cm (10 in.) film in Extended and Standard Modes.

(b) Record the dry-to-dry processing times. The correct time for a 24 cm (10 in.) film is:

Extended: 3 minutes and 23 seconds

Standard: 2 minutes and 15 seconds

[2] If the dry-to-dry processing times are not correct, adjust the speed of the MAIN DRIVE MOTOR.

(a) Remove the TOP COVER and drive SIDE PANEL from the PROCESSOR.

ESD
Possible damage from electrostatic discharge.

(b) Open the ELECTRICAL BOX.

(c) Set the STD/EXT SWITCH to “STD”.

(d) Feed 24 cm (10 in.) of film into the PROCESSOR. Measure the time for each 24 cm (10 in.) of film to enter the PROCESSOR. The correct time is: Standard: 19 seconds

(e) Set the STD/EXT SWITCH to “EXT”.

(f) Feed 24 cm (10 in.) of film into the PROCESSOR. Measure the time for each 24 cm (10 in.) of film to enter the PROCESSOR. The correct time is: Extended: 29 seconds

(g) If the transport time is not correct, adjust R201 for the Extended Mode or R202 for the Standard Mode on the 200 CIRCUIT BOARD. See the figure on Page 36.

Important
It is important to check the speed of both modes, especially if an adjustment is necessary for one mode.

(h) Do Steps (a) - (g) again to check the processing times. Continue the procedure until the processing times are correct.

(i) Close the ELECTRICAL BOX.

[3] Install the SIDE PANEL and the TOP COVER.

Section 12: Publication History

Print Date	Pub. No.	ECO No.	Affected Pages	File Name	Notes
Sept 1992	981900	4014-318	All	3133ii_f.txt	Original Printing in caps
Sept 1996	981900	4014-432	All	ii3133_1_432.doc	Revised to reflect the new size Feed Shelf, update the replenishment flow rate table, and add warnings on drain construction. Converted to FrameBuilder.

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